ENGINEERING NEWS-RECORD

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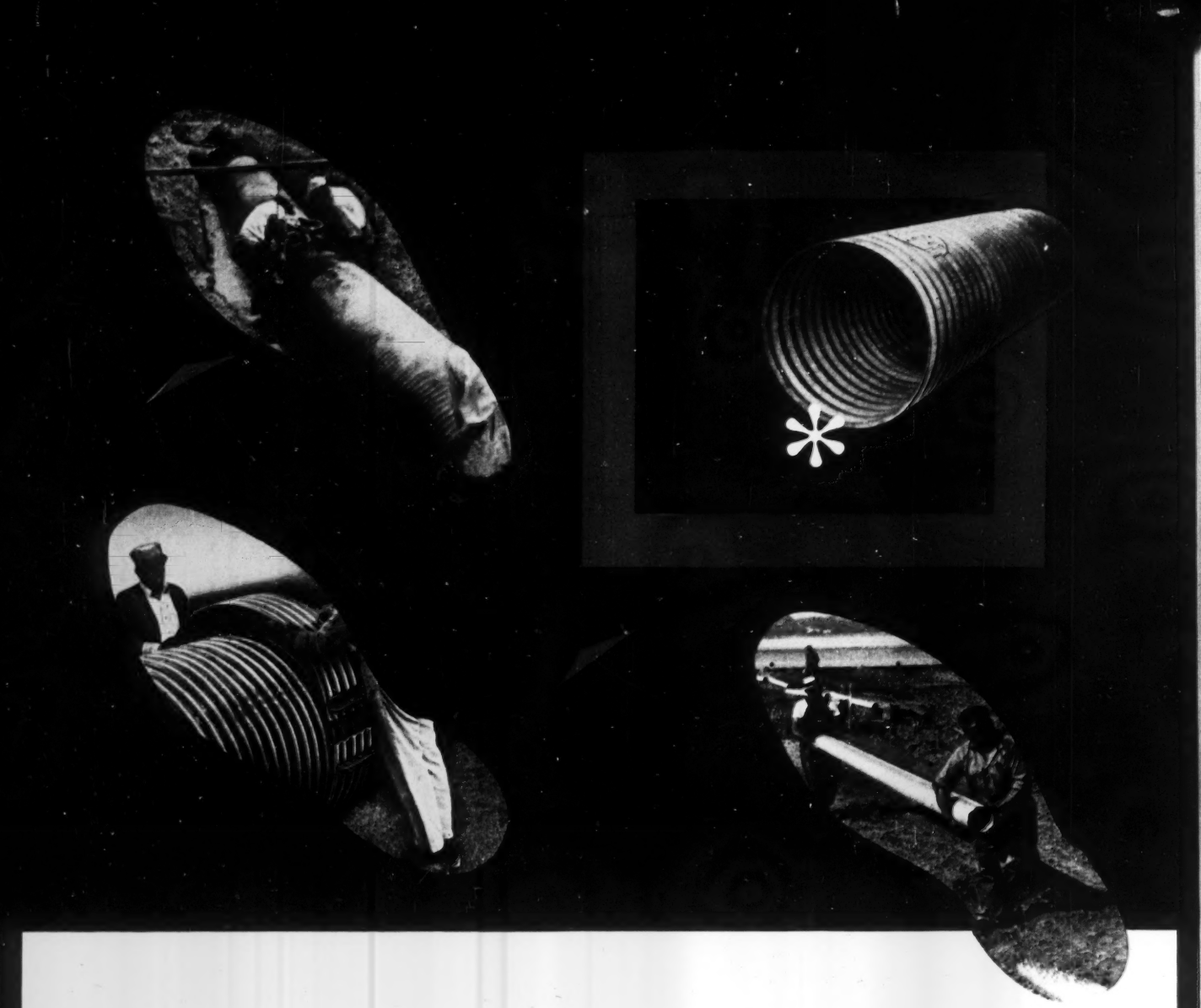

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Can your diesels match this torque curve?

This is the torque curve for the P&H Model 687-C Diesel Engine. Note how the torque characteristics are sustained throughout its entire horsepower range.

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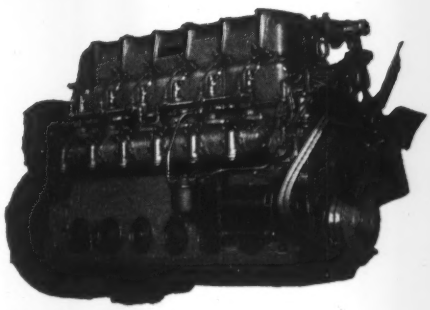

P&H Diesel Engines are built in 1, 2, 3, 4 and 6-cylinder models — up to 145 h.p.

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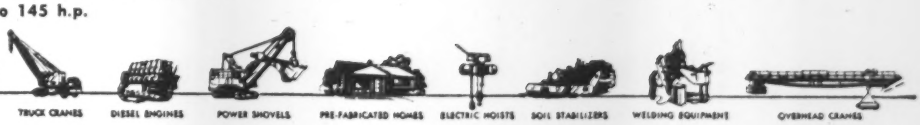
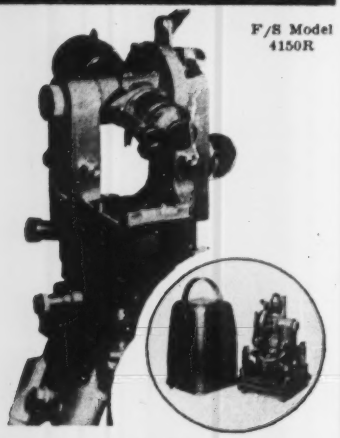


F/S OPTICAL TRANSIT

F/S Model 4150R



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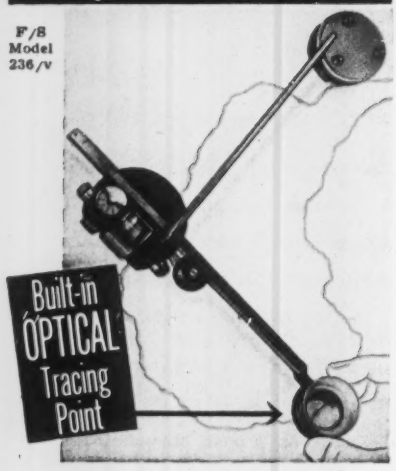

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Number of copies of this issue printed: 59,479

Contents on page 17

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E. E. Halmos Jr. — *Managing Editor*
V. T. Boughton — *Transportation, Power*
F. S. Merritt — *Architectural, Structural*
R. H. Dodds — *Contracting, Heavy Construction*
S. C. Jensen — *Materials and Equipment*
A. J. Fox Jr. — *Hydraulics, Water supply, Sanitation*
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Publisher

August 13, 1953 — ENGINEERING NEWS-RECORD — Vol. 151, No. 7

Member ABC and ABP

Published weekly by McGraw-Hill Publishing Company, Inc., **James H. McGraw** (1860-1948), Founder. **Publication Office, 99-129 North Broadway, Albany 1, N. Y.**

Executive, Editorial and Advertising Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y. Curtis W. McGraw, President; Willard Chevalier, Executive Vice-President; Joseph A. Gerardi, Vice-President and Treasurer; John J. Cooke, Secretary; Paul Montgomery, Senior Vice-President, Publications Division; Ralph B. Smith, Vice-President and Editorial Director; Nelson Bond, Vice-President and Director of Advertising; J. E. Blackburn, Jr., Vice-President and Director of Circulation.

Subscriptions: Address correspondence to Engineering News-Record — Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address.

Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. Position and company connection must be indicated on subscription orders.

Single copies 35¢. Subscription rates — United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada, $8.00 a year; $12.00 for two years; $16.00 for three years. Other Western Hemisphere countries, $15.00 a year; $25.00 for two years; $30.00 for three years. All other countries, $20.00 a year; $30.00 for two years; $40.00 for three years. **Entered as second class matter October 29, 1936, at the Post Office at Albany, N. Y., under Act of Mar. 3, 1879. Printed in U. S. A.**

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38 NORTHWESTS on the

WEST VIRGINIA TURNPIKE

The West Virginia Turnpike is adding another epic to the story of road building. Here, through the mountains, rugged terrain is putting a real test on equipment. It is significant that 38 Northwests are helping to build this latest of famous Turnpikes—Thirty eight—more than any other make of similar equipment.

These Northwests are owned by contractors whose names alone are testimonials to the quality of Northwest performance. Look over the list. Where could you find a testimonial that would better assure you that Northwest Equipment will give you the type of service you are looking for?

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3 Three Model 80-D's

Reed Kuhn, Elysburg, Pa.
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One Truck Crane

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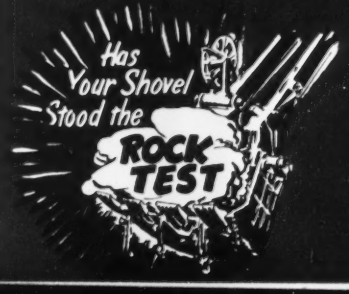

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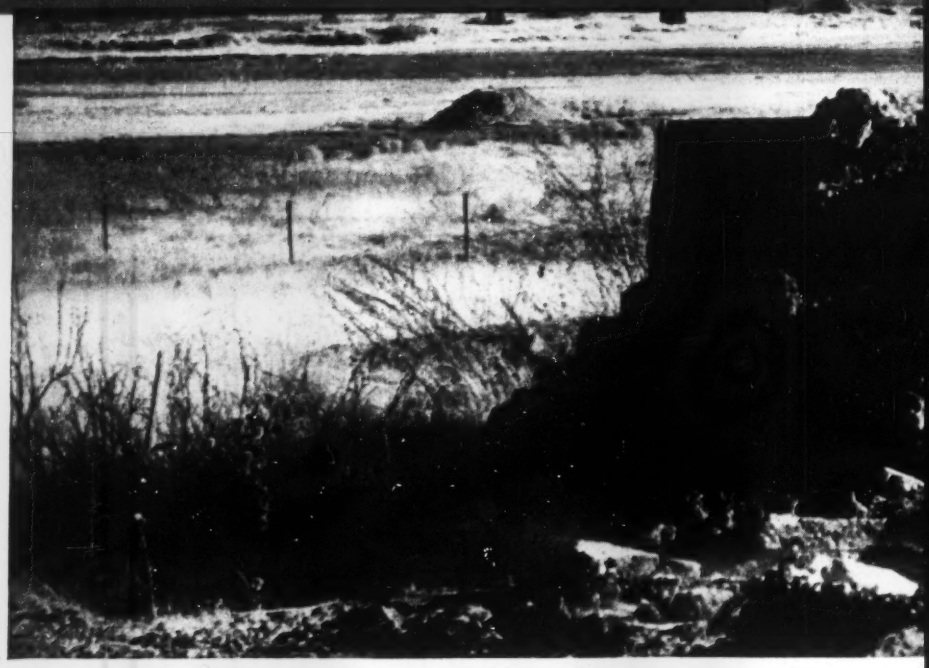
"OUR MAINTENANCE COSTS ARE LOW with TEXACO MARFAK"



—says New Mexico contractor *(name on request)*

TEN YEARS on-the-job experience with the world's most famous chassis lubricant brings forth this comment from a leading contractor:

> *"Texaco Marfak stays in the bearings, gives longer lasting protection against wear and rust even under the toughest conditions, and definitely increases parts life."*

Everywhere, contractors look to *Texaco Marfak* for better lubrication at lower cost.

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In crawler track mechanisms, use *Texaco Track Roll Lubricant*. It's especially designed to seal out dirt and moisture, guard your bearings against wear and rust.

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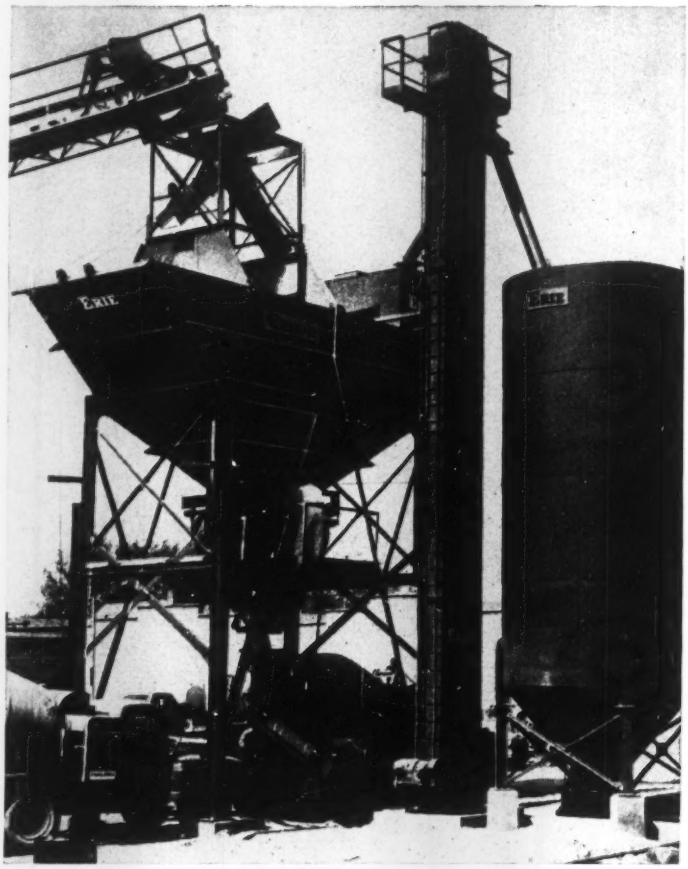

One man operates this GTES-79 Erie bin and weighing Aggremeter for Mohawk. Their own men set it up because it comes in well-engineered, easy-to-assemble sections. Over-the-road hauling is easy for the same reason. Capacity is 80 yds. of specification concrete per hour.

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MAHON STANDARD POWER OPERATOR 920-P

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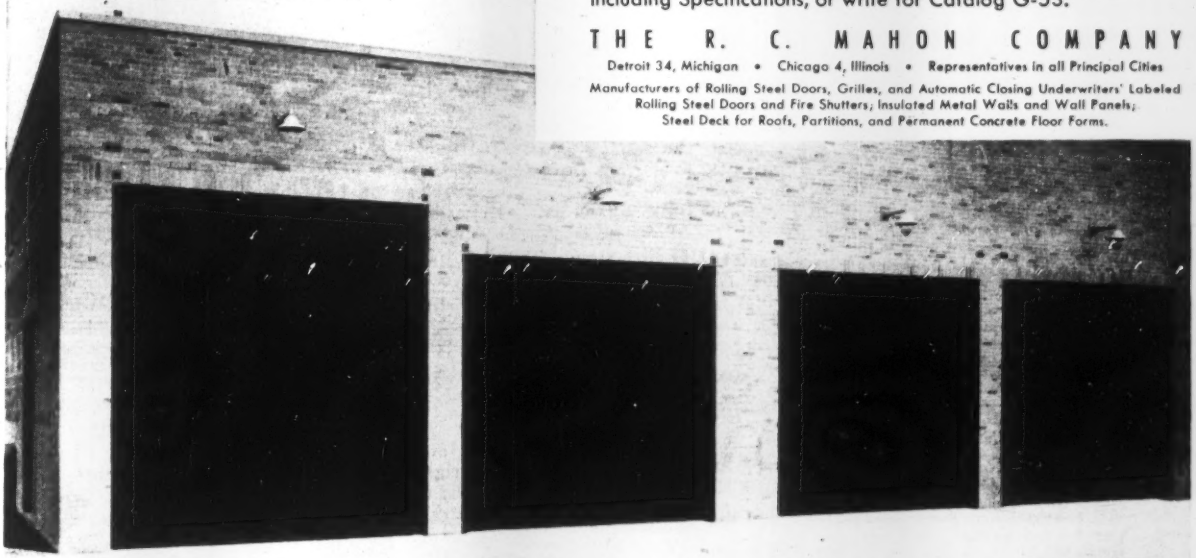
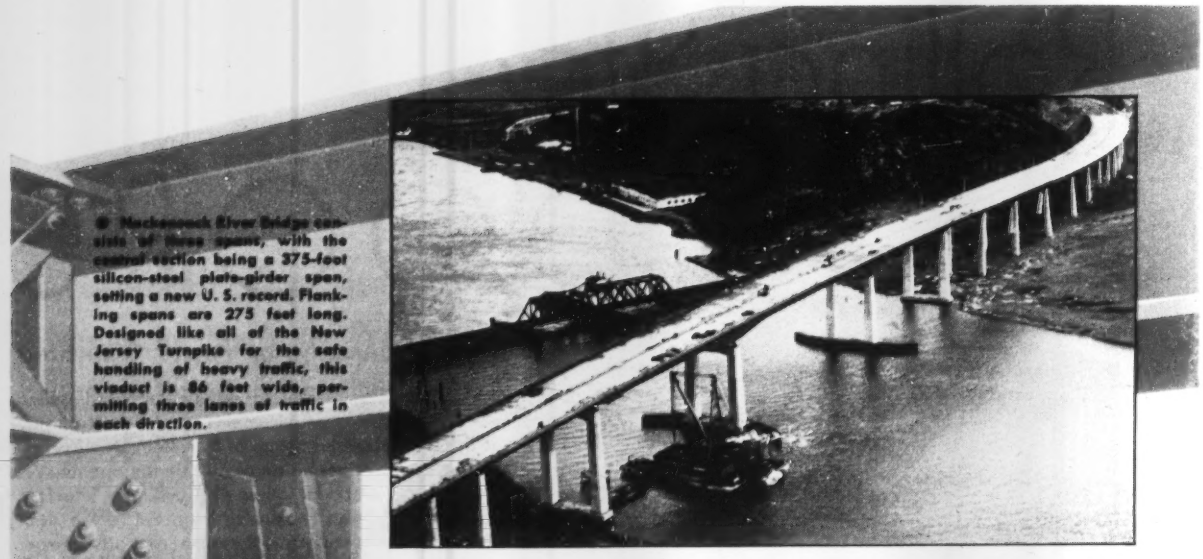
Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Four Mahon Power Operated Rolling Steel Doors installed in truck openings of an enclosed loading dock at Detroit Hardware Company's new plant.

MAHON



● Hackensack River Bridge consists of three spans, with the central section being a 375-foot silicon-steel plate-girder span, setting a new U. S. record. Flanking spans are 275 feet long. Designed like all of the New Jersey Turnpike for the safe handling of heavy traffic, this viaduct is 86 feet wide, permitting three lanes of traffic in each direction.

American Bridge Protects New Jersey Turnpike's Hackensack River Bridge With

PITTSBURGH'S NEW XLO STRUCTURAL-STEEL-PRIMER

XLO Steel Primer Gives You These 5 Important Advantages:

1. Unexcelled wetting properties insure uniform protective coating of steel surface irregularities caused by mill scale.
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4. Provides optimum protection against metal corrosion during shipment and erection; also serves as the foundation coat for the field painting system.
5. In addition to meeting ASTM Specification D-234-48 and Federal Specification TT-O-369 covering Raw Linseed Oil, XLO Structural Steel Primer provides a plus in drying over specification requirements.

● **One of the vital links** of the 118-mile New Jersey Turnpike is the $9,500,000 Hackensack River Bridge opened recently. This important portion of the new toll highway which connects the New York metropolitan area with points south, is 5,623 feet long. Spans for this viaduct were fabricated and erected by the American Bridge Division, United States Steel Company.

● **Pittsburgh is proud** that its new XLO Structural Steel Primer was used to safeguard these record-size girders during transit and erection. This new kind of primer is derived from linseed oil, combined with red lead and iron oxide pigments to provide protection for all kinds of fabricated structural shapes during transit, erection and before application of field coats. It is also furnished with 100% red lead, if desired. A variety of IRONHIDE coatings are also available in a range of colors suitable for field coat application.

● **For further information** write, wire or phone Pittsburgh Plate Glass Company, Industrial Sales Division, 2000 Grant Building, Pittsburgh, Pa., or any of the factories listed below.

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Fill in the appraisal form below, mail it to your Dodge dealer! He's anxious to trade and will do his level best to meet your terms! No cost, no obligation!

Here's your chance to make the trade of a lifetime on a brand-new Dodge "*Job-Rated*" truck! And there's no dickering, no beating about the bush! Just do this:

Decide what you believe your present truck is worth. Put your trading price on the appraisal form below, tear out the form and mail it to your Dodge dealer. He's anxious to trade, and will do his level best to meet the price you put on your present truck. If he can't meet your price, there's absolutely no obligation. If he can, you've got a "name-your-own-price" deal! You've everything to gain, nothing to lose, so mail the appraisal form today!

Dodge trucks give you:
7 great engines with 106 to 171 h.p. • Advanced braking • No-shift Truck-o-matic transmission available in ½-, ¾-ton models • Shorter turning than competitive makes • Unusually low loading height • Completely rustproofed sheet metal • Full-vision, solid-comfort cabs.

Cut out and mail this appraisal form to your Dodge dealer!

or phone in the information

(See Classified Section of Telephone Directory for address)

I have a _____ truck, in _____
(year, make, model) (good, fair, poor)

condition. I think it is worth $ _____ in a trade. I understand that you are not obligated to meet this price, nor am I obligated to accept it.

Name _____

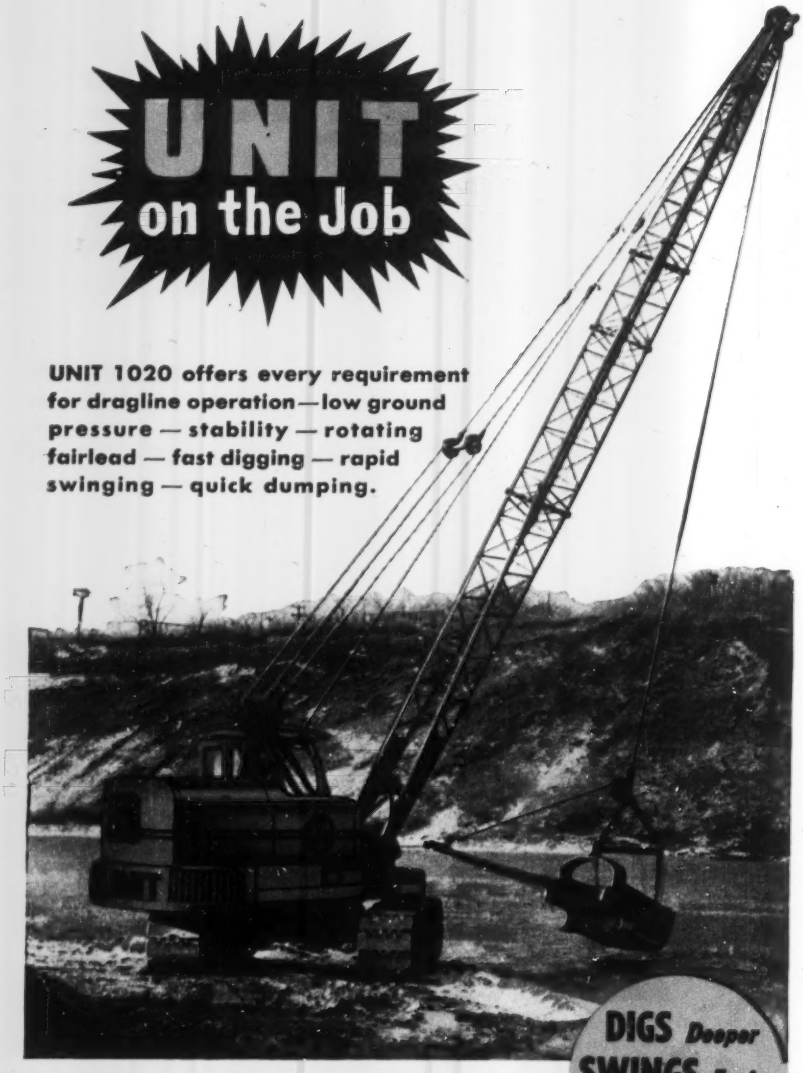
Mailing Address _____

Save money every mile with

DODGE "Job-Rated" TRUCKS

UNIT on the Job

UNIT 1020 offers every requirement for dragline operation—low ground pressure — stability — rotating fairlead — fast digging — rapid swinging — quick dumping.



DIGS *Deeper*
SWINGS *Easier*
LOADS *Faster*

Perfectly balanced for long boom operation, the UNIT 1020 is ideal for general excavation work, sand and gravel pits, irrigation, drainage and stripping operations. Available with UNIT TORQUE DRIVE, this machine gives you smooth performance, eliminates "shock loads", cuts fuel expense. Write for literature.

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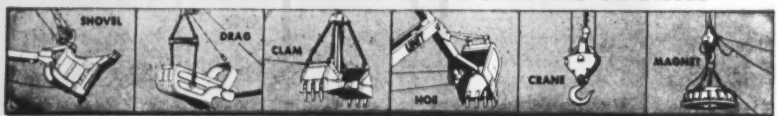
½ or ¾ YARD EXCAVATORS...CRANES UP TO 20 TONS CAPACITY
CRAWLER OR MOBILE MODELS . . . GASOLINE OR DIESEL



All Models Convertible to ALL Attachments!

READER COMMENT

Fuzzy thinking?

SIR: The last editorial on page 128 of ENR June 11 is the fuzziest thinking I have ever read in your distinguished publication. I have followed the Ohio Turnpike court case since its inception not only because of my personal interest in one of the particular types of construction under discussion but because of its possible damage to the future of the engineering profession.

The Ohio Turnpike Commission engaged the finest engineering talent to prepare plans and specifications for its proposed toll road. These experienced engineers were thoroughly familiar with various types of pavement, soil conditions, anticipated traffic, maintenance costs, safety requirements and service life.

After exhaustive studies the engineers recommended to the commission that portland-cement concrete pavement be selected for the turnpike. The commission inspected other turnpikes, including New Jersey and Pennsylvania, and held most thorough public hearings at which the proponents of various paving materials were permitted to present any and all data they wished. After review of the data and further study, the commission accepted the engineers' recommendation and chose concrete pavement.

An asphalt paving contractor challenged the commission's decision and started court action. The Appellate Court's decision was 2 to 1 against the commission. However, the Ohio Supreme Court reversed the Appellate Court by a unanimous 7 to 0 decision.

Keep in mind that the commission chose concrete pavement because it was convinced that the concrete would render the best service at the lowest cost per year. Now then, your editorial strongly implies that the commission should proceed to build part of the turnpike with concrete and part with flexible type, and the editorial states that the commission could do this "without compromise of basic principles". How could the commission spend bondholders' money to build part of the toll road with a concrete pavement it considered superior and another part with a flexible material it considered second best "without compromise of basic principles"?

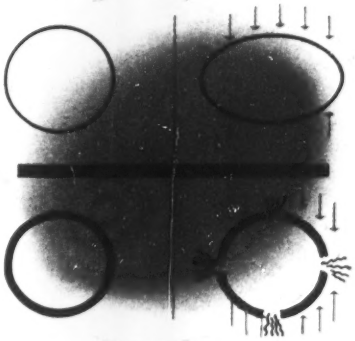
V. N. HOLDERMAN
President
V. N. Holderman & Sons, Inc.
Columbus, Ohio

[EDITOR'S NOTE—There were two editorials on the Ohio Turnpike on page

Install 'em... forget 'em...

TONCAN IRON DRAINAGE STRUCTURES

CORRUGATED METAL PIPE
flexes to accommodate increased loads without structural damage.



RIGID PIPE
deforms permanently . . . fractures and spalls . . . under increased loads.

When you install Toncan Iron Corrugated Metal Drainage Structures, you have no problems of breakage in unloading and setting, no need for highly-skilled labor, no fears about cold weather, no problems of materials in isolated places. Toncan Iron Drainage Structures are easy to install *anywhere,* with unskilled help.

Once in, Toncan Iron Structures maintain their water-carrying capacity practically unchanged for years. Shifting subsoil and settling backfill will not fracture or crush Toncan Iron Pipes. Frost and erosion can never cause spalling and growing roughness to handicap water-carrying capacity.

Toncan Iron... with double the copper used in ordinary copper-bearing steels and irons, plus just the right amount of molybdenum to make the copper more efficient in resisting rust . . . gives you a metal drainage structure that you can *install easily and forget* for years.

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CHOCTAW, INC.
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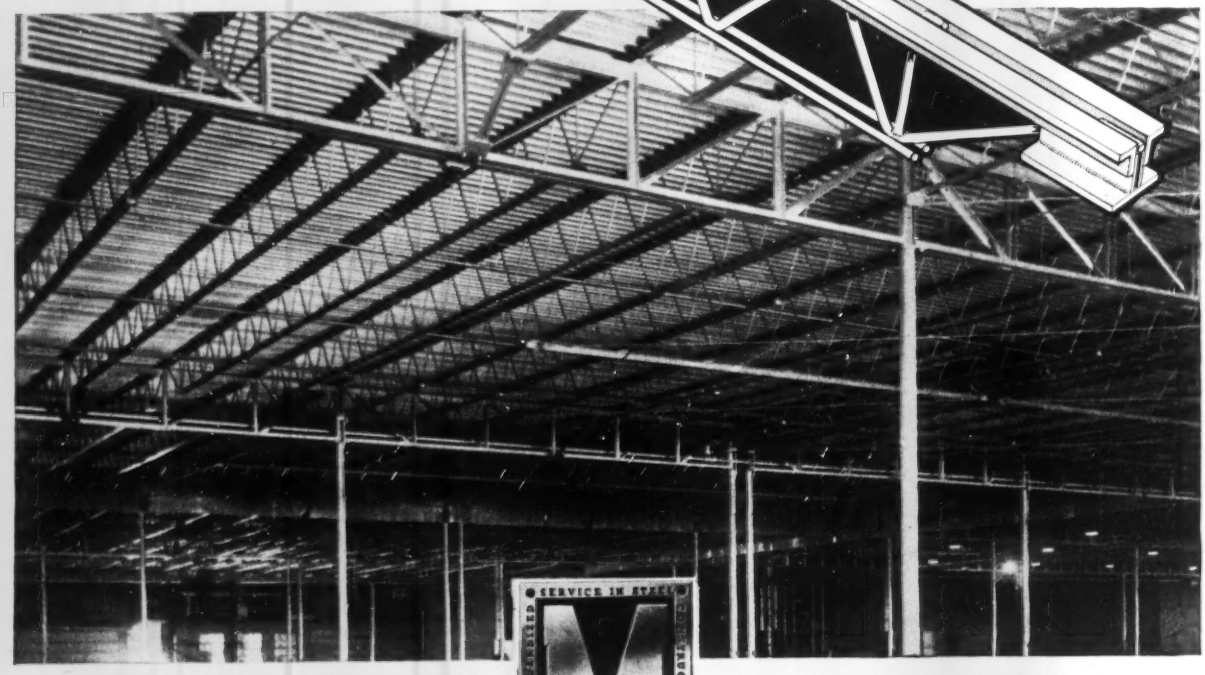

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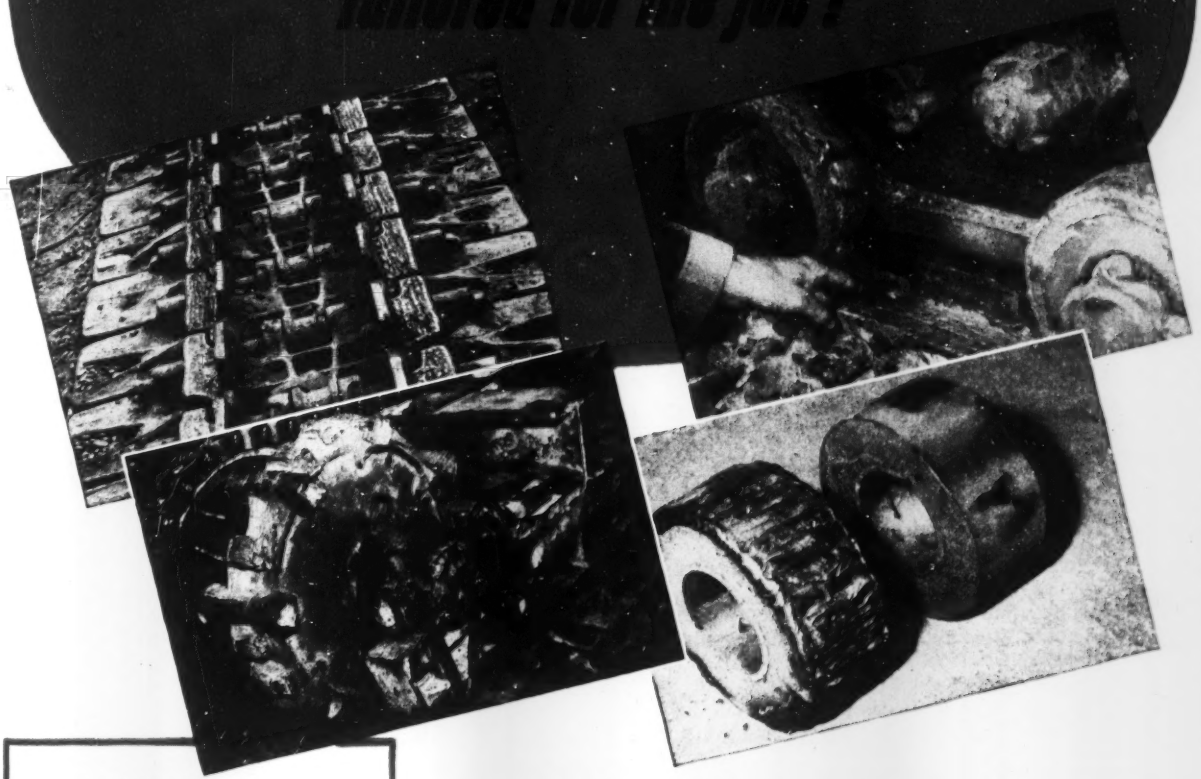
tailored for the job!



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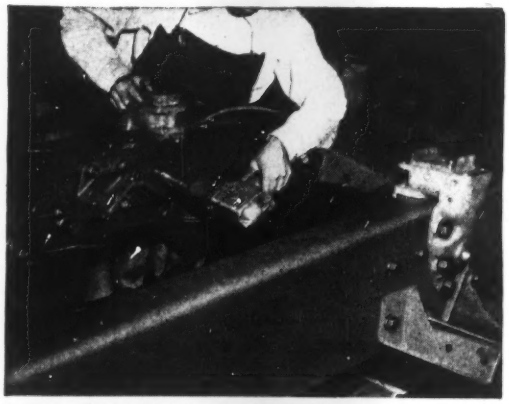
Where you want to join structural members firmly together so they'll *stay* together for good, high-strength bolting is often your best bet.

As the leading manufacturer of all kinds of fasteners, we're in the unusual position of always being able to recommend and supply the right ones for all your needs. Write to RUSSELL, BURDSALL & WARD BOLT AND NUT COMPANY, Port Chester, N. Y.



FASTER FASTENING is achieved in the Autocar plant at Ardmore, Pa., by using air tools like the one shown here to run up RB&W nuts on RB&W bolts on an Autocar truck frame. In addition to making tight, accessible joints, bolting effects substantial assembly savings.

3.1

RB&W

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128 of the June 11 issue. If Mr. Holderman read the first one he must know that the editors are in complete agreement with him as to the soundness of the Ohio Supreme Court's action in reversing the decision of the Appellate Court.

The point of the second editorial was that the Ohio Turnpike Commission, faced with costly delays resulting from this court fight, might be able to make its available money go farther and at the same time speed the day when the turnpike could begin to produce income by paving part of it with bituminous concrete, even though its engineers believed that portland-cement concrete would provide a better pavement.

We can see no compromise of basic principles in such a proposal, as we said in the editorial. Engineers make such decisions every day when they have to count costs. They may consider one product superior to another, but if its cost exceeds what they have to spend, use of a somewhat less costly product is indicated. And when time of completion is an important factor, as it certainly is on the Ohio Turnpike, substitution of some other material is common practice. That was done frequently during the war years.]

SIR: It is not normally my practice to comment to the editors concerning the material in their publication, but the editorial in the June 11 issue of ENGINEERING NEWS-RECORD entitled "A Step That Could be Taken" is such a sound piece of logic, as well as being directed in the best public interest, that I feel obliged to say, "Well done."

TED BEEBE
Indianapolis, Ind.

Correction

The name of W. R. Bellis, chief of the Traffic Design and Research Section, New Jersey State Highway Department, was incorrectly given as W. R. Ellis on p. 37 of the August 6 issue of ENR.—Editor.

CALENDAR

Joint meeting International Association for Hydraulic Research and Hydraulics Division of the American Society of Civil Engineers, University of Minnesota, Minneapolis, Sept. 1-4.

American Concrete Pipe Association, annual short course school of instruction, Sherman Hotel, Chicago, Ill., Sept. 10-12.

American Institute of Parks Executives, Denver, Colo., Sept. 13-18.

National technical conference on lighting, Illuminating Engineering Society, Hotel Commodore, N. Y., Sept. 14-17.

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IN THIS ISSUE

August 13, 1953 Vol. 151, No. 7

NATIONAL AFFAIRS

Why did Ebasco lose its biggest power plant contract? 21
Straits of Mackinac pipeline operation under way 22
Another turnpike proposed in Ohio 23
Pennsylvania plans turnpike extension 23
Work begins on Baltimore tunnel plans 24
Corbetta Construction Co. awarded $8.6-million Navy contract 24
Massachusetts turnpike route selected 25
Novel paving method proves its worth near Los Angeles 25
California seeks to end confusion in state agencies' building codes 26
'Hard money' policy, federal gas tax: targets at Governors' Conference 26
Administration to push slum clearance 27
PHA faces tough decision because of 20,000 unit limit 27

LABOR

White House at bay on Taft-Hartley 29
California's election day confusion may be cleared up 29
Strike roundup: New York, California, St. Louis 30
Closed shop pacts hit 30
Fringe activity: Health plan in Ohio court, Arkansas tiff settled 30

FEATURES

Casablanca construction gives old city a modernistic skyline 32
Pipeliners' nightmares are over 37
New York City skyscraper is quickly sheathed with two-story Aluminum panels 43

MUNICIPAL

Columbus, Ohio, stresses long-range planning 49
Fight ends in Youngstown: $10-million sewage plant considered 53
Toronto's 'insurance row' greets $8-million neighbor 54

INTERNATIONAL

Ardennes bridge: First to span Meuse River without river piers 58
British collaborate on St. Lawrence Seaway bidding 59
Hydroelectric power projects boom in Japan 60
Old South African dam to be prestressed 61
Japanese National Railways plan record tunnel 61

MEN AND JOBS

Sammy Collins on the job 62

BUSINESS AND FINANCE

Municipals in seven-month sales are 30% over 1952 period 91
Prefabricator will make buildings from steel 91
Shortage of warehouses means construction jobs 91
FNMA's new 'one-for-one' plan won't ease mortgage market 92
General Motors to buy Euclid Road Machinery Co. 92
Washington more optimistic on new 1953 construction 92
Activity This Week 93

NEW PRODUCTS

New gas recirculation system for sludge tanks 115

Reader Comment 10
Calendar 15
Washington Observer 19
Obituaries 66
Books 69
Legal 70
Construction Reports 73
Unit Prices 86
Editorials 120

THE CONSTRUCTION WEEK

- **How big a pot?**—The tempest Secretary of State Dulles stirred up with his comment on use of U.S. troops to aid Korean rehabilitation may or may not outgrow its teapot.

  What Dulles seemed to have said was that troops in Korea might be put to work building roads, bridges, schools—as an aid to their own and Korean morale. That brought immediate reaction from both political sides—Democrats calling it an outrage, Administration stalwarts attempting to bail out Dulles.

  Key of course is construction—and just where military construction ends and other types begin. You could call highway work military—and build the roads with Engineer troops, for instance—without violating tradition or taking work away from private contractors and building craftsmen. But schools would require some stretching of the "military" term. Anyway, said the Administration, what Dulles meant was to have the forces give "technical" aid to South Korea.

- **Atom work**—The construction industry has done its share of work for producing atomic energy. Guarded signs now appear that there may be more—this time in private developments.

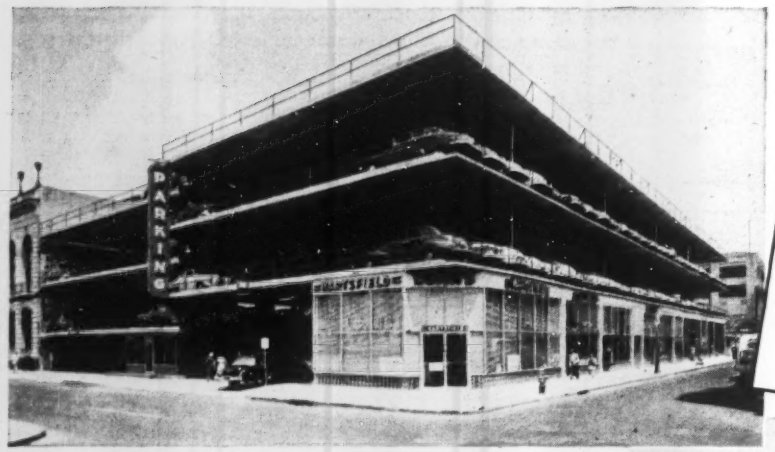
  There's a serious move among congressmen to remove current legal restrictions on industrial activity in the atomic field, despite a general congressional inclination to shunt changes in the Atomic Energy Act aside in an election year. Operations of the would-be changers will be worth watching next session.

- **Test-drive toll study**—Iowa highway engineers will drive 8,000 mi over the state's primary roads this summer and fall as the preliminary phase of a toll road study. Two test trips will be made over each section of heavily traveled east-west highways in the state. On one trip, the driver will drive as fast as the road permits. On another, he will be required to "float" with the traffic to obtain an average driving time. In "floating," the test driver, will let other motorists set the pace. For example, he won't pass a vehicle until another one overtakes him. Detailed records of traffic conditions are to be kept. Findings will supplement an interview survey being conducted to learn needs of drivers on Iowa roads.

- **Truckers fared pretty well**—A survey of this year's state legislative sessions shows that revisions in truck size and weight regulations favorable to one or more types of truckers were enacted this year in at least 18 states. Bills proposing revisions unfavorable to the trucking industry failed in four state legislatures. A trend toward heavier penalties for truck overload violations continued to spread, however, with eight states passing such measures.

  The trucking industry's most significant defeat came in Pennsylvania, where efforts to liberalize the state's weight limit of 45,000 lb for most commonly used types of trucks failed. Most important gain was in Tennessee—increased maximum gross from 42,000 to 55,980 lb.

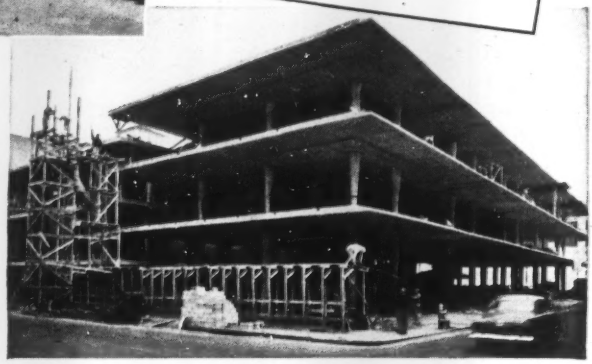
Parking Progress!



Low-Cost, Open-Deck Garages a Sound Solution of the Downtown Parking Problem

● Garage construction is at an all-time high, as private and public operators move to relieve traffic-jammed streets by providing off-street, downtown parking near stores, hotels, theatres. For inherent fire-safety and lowest annual cost, concrete has first call, and for low cost per parking space, open-deck construction is rapidly gaining in favor.

Built at a cost per parking space considerably below the national average, this New Orleans garage was erected as a series of structures, with half of the 3-story building lapping into the adjacent half, each half consisting of 5 units separated by a flat slab, supported by cantilevers which project to receive the slab which bridges the gap. Identical size of multiple elements permitted maximum economy in form re-use. This open-deck structure, functional as



breathing, was concreted throughout with Lone Star Cement, providing an important plus in concrete quality which means extra durability and satisfaction through the years.

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WASHINGTON OBSERVER

Army Engineers-Reclamation merger squabble is coming up again. The new Hoover Commission on Government Reorganization getting under way this fall will put the dispute high on its agenda. In 1949 it split on whether to merge the two public works agencies. This time the commission will have more authority for making decisions. It will decide what the government policy should be on federal activity, not just decide how already established programs can be done most efficiently.

The whole new deal, then, is up for review. That'll mean hard look-sees at public power, federal aid to highways, housing, soil conservation, etc. Hoover says his job is to: "Lessen bureaucratic tyranny over our citizens."

•

Other "commissions" are picking up where Congress left off. One for construction men to pay close attention to is the federal-state relations commission set up last spring by Eisenhower. It too, will come up with recommendations for the President on the federal government's role in grants-in-aid for public improvements, for divvying up gasoline excises, for returning power to the states.

The new Joint Chiefs in the Pentagon will set up a 1955 fiscal year budget on overseas, as well as domestic installations.

•

What AFL building trades want in any new Taft-Hartley law: (1) Liberalizing the secondary boycott ban to permit union members to quit work when a subcontractor puts non-union men on a job; (2) allowing union shop agreements in construction before work begins; (3) nullifying "right to work" laws in 12 states.

Labor Secretary Durkin got these provisions in the famous "draft" of a White House proposed message to Congress. The building trades intend to see that they stay in the final draft.

•

Contractors on big projects will soon find it easier to work out basic working conditions with building trades unions. They can agree on uniform overtime, travel pay, etc., by dealing straight with building trades chief, Richard Gray. Heretofore, the AFL executive council had to give the okay, and it meets only four times a year.

•

Debt ceiling squeeze won't be felt by builders on government jobs. They'll get their money, despite warnings from Treasury Secretary Humphrey on the perils of failure of Congress to raise the debt ceiling.

There's probably enough cash and credit in the kitty to get by even for the next six months by the Administration's own estimates of income and outgo. But Humphrey figured he could be wrong, and it just isn't good business to operate with so narrow a margin.

Congress will come back and raise the debt limit if it has to. It mainly objected to the way the Eisenhower team handled the situation—tossing in a last-minute hurry-up request for legislation just as the legislators were winding up the session.

•

Plenty of construction has to be done in Korea beginning next year. A four-year reconstruction program is being planned and it calls for the building of millions of houses, improvements to highways, re-building of railroads, ports, and electric power plants.

U. S. builders will get a crack at all this but they'll have to bid against other constructors from all over the free world. Construction will be a big chunk of the estimated $1.2-billion Korean program.

Another truckload of Ryerson re-bars rolls to the site of the world's largest underground garage. The project which will handle 2,356 cars is being constructed under the sponsorship of the Chicago Park District, Robert A. Black, Chief Engineer. John Griffiths & Son is the contractor; Ralph Burke, Inc. the engineering consultant.

$500 a day penalty-bonus contract!

Ryerson Meets Re-bar Schedule

Here's a job where it's vitally important that reinforcing steel be delivered absolutely on schedule. Because, during construction of this huge understreet garage, three of the busiest blocks of Chicago's Michigan Avenue are just a gaping hole in the ground. And Christmas traffic jams come closer every day.

That's why there is a penalty of $500 a day if the job is not completed on schedule. And that's one reason why the contractor selected Ryerson, known for dependable deliveries, as the source for reinforcing steel.

Day after day this summer and fall, Ryerson re-bars will be on the spot when needed. There can be no lagging shipments—but no pile ups either because storage space is at a premium in this congested area.

You can depend on Ryerson reinforcing service, too, from setting plans to steel on the site. Your re-bars will be cut and bent, accurately—metal-tagged for permanent identification. And to simplify purchasing you can order all other steel requirements from the same convenient source. On your next job call Ryerson for a lump sum or average pound price.

Construction Steel In Stock: Re-Bars and Accessories • Wire Fabric • Steel Spirals Structurals • Plates Including Safety Plate • Sheets • Tubing • etc.

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CONSTRUCTION FLOODLIGHTS have been darkened at Joppa, Ill., power plant while job changes contractor.

Labor blamed in Ebasco contract loss

Rising costs worry AEC; Bechtel brought in to finish Illinois plant to supply power for Paducah project

Trailer parks around Joppa, Ill., were thinning out this week as migratory construction workers and their families moved on to seek work elsewhere.

Their employer, Ebasco Services, had been dismissed as construction agent for a thermal electric plant to supply half the power needs of an Atomic Energy Commission installation at Paducah, Ky. The new contractor, Bechtel Corp., of San Francisco, had no word for the workers about when rehiring would begin.

There is no shortage of theories about why Ebasco, one of the oldest and largest firms in the business of designing and building power plants was taken off the job, biggest of its career. The client, Electric Energy, Inc., a combine of five large electric utility companies which had tackled the job of producing about 750,000 kw for the Paducah project, spoke tersely of canceling Ebasco's contract for the $160-million plant "in order to permit reorganization . . . so the construction can be completed on a more efficient and economical basis."

Ebasco blamed "local conditions which have prevailed almost since the start of the job and have affected adversely not only the cost but the progress of the construction work."

All concerned seem to agree that there was no fault to find with the quality of Ebasco's designing and engineering, and Ebasco retains its contract for this phase of the work. Nor has any criticism been voiced with the quality of the construction, which has put two of the five generators in operation and has a third just about completed.

Troubles center on slow progress and high cost, and the cancellation of Ebasco's construction contract is apparently the first step in a plan to overcome them.

• **Behind the sparse words**—Ebasco, AEC and EEI agree, openly or indirectly that labor problems peculiar to the Joppa area must take the major blame for pushing costs up an estimated $30 million.

The labor situation at Joppa was the "world's worst," according to an AEC spokesman. "Worse than at Paducah," he said. (He referred to the series of strikes and disputes which have for two years plagued F. H. McGraw Co., which is contractor for the AEC's plant at Paducah.)

In proportion, Ebasco had more strikes than McGraw. Ebasco had 43 stoppages on its $160-million job; McGraw to date has had 73 on its $1-billion project. Improvement of the Paducah situation was effected a few months ago, but such was not the case at Joppa.

There have been charges of attempted labor shakedowns and of sabotage, but both are hard to confirm. Allusions to demands by Illinois labor leaders for a flat percentage of job costs as a fee to prevent strikes could not be substantiated. The AEC has no knowledge of any attempts at extortion, according to its spokesmen in the area.

• **Subversive influence doubted**—Two of Ebasco's subcontractors complained to ENR that demands by labor leaders made their work at Joppa power plant difficult.

One, a trucker, said a union leader insisted on steep premium pay and laid down a "lot of rules I wouldn't abide by."

The other, an excavation contractor, said he was forced to put on a foreman and steward when "neither was needed," even on two-man jobs. Both had heard reports of shakedown attempts, but neither had direct knowledge of them. EEI had heard the rumors too, but could shed no light on them.

Communist influence has not been thought of seriously as a factor in the Joppa troubles. The AEC says it's found no basis for suspicion of Red efforts, but reports that for the past two months workers have been fingerprinted and given security checks in the Paducah area.

Sabotage was held by EEI to be responsible for a boiler furnace explosion at the Joppa plant last spring. The Federal Bureau of Investigation has made no report, but AEC puts little stock in the sabotage theory.

Evan Dale, Illinois labor leader, who heads a labor pool that supplies workers for the Joppa plant, was indicted

last month by a federal grand jury. He was accused of extorting $2,898 from a subcontractor on another project. The grand jury at the same time found widespread labor racketeering in Illinois, especially among building trades unions.

The strikes which resulted in the loss of one in every five man-days at Joppa were not over wages. Most of them were jurisdictional, but the causes of many could not be traced. The National Joint Board for the Settlement of Jurisdictional Disputes was called in time and again. In many cases, however, the issues were vague, and could be assigned only to a general, seething unrest among the work force.

• **Migratory worker problem**—The history of labor troubles in the past two years in the Kentucky-Illinois-Missouri area is well known. Large numbers of workers flowed into the Paducah-Joppa area to meet the sudden demand of AEC projects.

The small AFL building trades locals, that were ill-equipped to handle huge non-voting memberships, found themselves in immediate disagreement with the migratory workers. Struggles for power in the locals were reflected in numerous strikes.

At Paducah, in recent months, regular meetings of the international representatives of the AFL unions involved have done much to settle disputes before they could reach the strike stage. No such techniques were employed at the Joppa site. Instead a steady deterioration of the labor situation has resulted.

Ebasco was kept on the job until the second power unit went on the line late last month. But there were indications several months ago that all was not well at Joppa. EEI began to assume full responsibility for public relations and increasing responsibility for labor relations. And a curtain of silence fell over the project. There were reports that EEI discouraged Ebasco from bringing in AFL international representatives to settle jurisdictional troubles.

Those who have followed the Joppa labor troubles from the start think firmer control of membership by both local and international leaders of the AFL unions would have done much to avoid work stoppages.

Bechtel representatives have been at work for a week sizing up the problems they will meet in finishing the job. Their labor relations man, John O'Connell, gives observers in Paducah an impression of genial but firm capability. Bechtel thinks labor will be its toughest problem at Joppa.

• **AEC feared rising costs**—EEI's contract with the AEC calls for power at a fixed fee, which can be altered to conform with construction costs. For this reason, AEC felt considerable concern about rising costs at Joppa, and there is little doubt that AEC's influence was partly responsible for the decision which brought about the dismissal of Ebasco.

Cost for Joppa power—$185 per kw—was not out of line at the time of dismissal, but AEC feared it soon would be.

The Joppa plant started delivering power to the Paducah plant about six months behind schedule, and the member firms of EEI helped meet the AEC deadline by pooling some of their own output in the meantime.

Peak employment at Joppa of about 2,600 construction workers a year ago had been decreased to about 1,600 employees when the contract was cancelled.

Bechtel faces a bright future, by comparison with Ebasco's troubles. It can negotiate from scratch with a comparatively fresh labor force, profiting by mistakes and events of the past two years. But the job will not be an easy task:

The basic labor troubles—ill-defined leadership and rivalry between resident and migratory workers—have not been eliminated.

A theory prevalent among those familiar with the situation goes something like this: No matter what changes Ebasco effected in its handling of labor, and no matter what outside efforts were made to root out the basic causes of dissension, a change was called for.

The dismissal of Ebasco from the job and the hiring of a fresh labor force may accomplish what rehashing of the old issue has been unable to do so far, it was felt.

Pulling of Mackinac Straits pipeline moves forward after slight setback

Operation will involve laying two 20,000-ft crossings composed of eight 2,500-ft lengths of welded pipe

After months of painstaking preparations, the pulling of the first of two 20-in. welded steel petroleum pipelines across the Straits of Mackinac eventually got under way early last Sunday morning.

Full details of the operation, rated as one of the outstanding engineering and construction feats of the last decade, will be described in a subsequent issue of ENR.

Some trouble developed when all but 60 ft of the first 2,500-ft section of pipe had been pulled into the water. One of the drum-shafts on the two-drum winch sheared off, stopping operations and necessitating a check of the pulling cable.

Pulling operations were scheduled to be resumed Monday afternoon, pulling the first section another 60 ft and welding the next section to it. Some delay was expected in repairing the winch but, once operations got under way again, it is expected to take only three to five days to finish pulling the line across the straits.

The second pipeline located 1,350 ft east of the first will be installed in about a month. Each crossing will be about 20,000 ft long and made up of eight 2,500-ft lengths of welded pipe buried in 15 ft of trench down to 65 ft below water level and resting on the bed of the straits below that elevation. Maximum depth of water is given as 243 ft.

The pipe is being pulled across the straits from north to south. Pulling is done by a powerful two-drum winch anchored back from the shoreline on McGulpin Point near Mackinaw City, while a running holdback winch on Point Labarbe near St. Ignace keeps the pipeline under tension and prevents its drifting off line.

The eight 2,500-ft sections of pipe are placed on a 2,500-ft rollaway and launched into the water over a special articulated launchway equipped with six sets of pneumatic tired wheels to minimize bending stresses set up in the pipe.

Each 2,500-ft section of pipe is welded to the previously launched section at the shoreline. The pulling cable is made up of 22,800 ft of 2-in. and 1¾-in. wire rope, which was previously strung from the pulling winch across the bed of the straits to the rollaway on the north shore.

Merirtt-Chapman & Scott Corp. hold an $8.3-million contract for the twin pipeline crossing at the straits. The project is part of a 635-mi, $75-million petroleum pipeline being constructed from Superior, Wis., to Sarnia, Ont., opposite Port Huron, Mich., by the Lakehead Pipeline Co., Inc.

Bechtel Corp. is acting as the agent for Lakehead, coordinating and supervising construction of the entire project.

The land portion of the pipeline is a single 30-in. dia pipe.

Another turnpike proposed in Ohio

300-mile tow road route would run north-south, Cincinnati to Conneaut

The Ohio Turnpike Commission is looking beyond its current $320-million, 241-mi northern Ohio toll road project to a proposed 300-mi superhighway from Cincinnati to connect in the northeastern corner of the state. Cost has been estimated at more than $400 million.

Formal request for an engineering study and traffic survey by the state highway department has been made by the turnpike commission.

The Cincinnati-Conneaut route would run in the direction of Dayton, Springfield and Columbus and cross the turnpike now under construction at a point in Cuyahoga County. At its northeast terminus, it could link with a projected extension of the New York Thruway.

• **Beightler accepts post**—Last week also brought Maj. Gen. Robert S. Beightler's acceptance of the post of executive director of the turnpike commission at a salary of $19,000 per year. The turnpike commission had been holding the position open for several months in the hope of getting the services of the wartime commander of Ohio's 37th Infantry Division, who delayed a final decision on taking the job for fear his health was not up to it.

Although he has spent many years on active military duty, Gen. Beightler has played an important role in the highway affairs of his native Ohio in past years. In 1940, he was appointed state highway director by then Gov. John W. Bricker.

Previously, Gen. Beightler was resident engineer for Franklin County, state highway division engineer in central Ohio and later chief engineer of the highway department's bureau of construction and design. He left government employ in 1929 to form the engineering firm of Stillhorn & Beightler, leaving this partnership to take the state highway director's post.

He commanded Ohio's 37th Division, a National Guard outfit, when it was federalized for World War II. He led it in combat in the Pacific.

• **Governor overruled**—Meantime, the state legislature and the governor last week had concluded a sort of tug-of-war over the comprehensive highway program passed at the recent session (ENR July 23, p. 23).

The legislature rejected the governor's appointment to a three-member highway construction council created to draft a construction priority list and to control expenditures of new road taxes, including a $23-million annual yield from a one-cent increase in the gasoline tax and $20 million from a new axle-mile levy on trucks. The governor now must submit the names of three other appointees but action cannot be taken before Jan. 11 and, the legislature will re-convene then only if on Nov. 3 the voters approve a constitutional amendment to permit a $500-million bond issue for a long-range highway improvement program.

Also overriden was the governor's veto of these measures: A highway department reorganization act, a bill redistributing $12-million yearly auto license fee yield to local governments for road and street purposes, and a measure which would have enabled private interests to build a bridge across Sandusky Bay from Cedar Point.

New traffic records set on New Jersey turnpike

Traffic on the New Jersey turnpike rose to 9,713,100 vehicles during the first six months of 1953, an increase of 25% over same period last year.

Average daily traffic amounted to 53,700 vehicles, or twice the number forecast by the engineers. More spectacular is the fact that in recent weeks the average daily traffic volume has climbed to 76,700 vehicles. For all of June, the total was 2,048,300, a new monthly record.

Based on traffic recorded so far in 1953, the volume this year will equal that forecast for the year 1971.

Despite this increasing volume, the accident record this year is down to 60.1 accidents per 100 million vehicle miles, as compared with 90.9 for the first six months last year. The fatality rate was 4.1 per 100 million vehicle miles, against 7.3 national average.

New order seeks safe backing up

California's Division of Industrial Safety is backing up by deed its "sound the horn when backing" order.

Long concerned over the number of serious injuries sustained by workers hit by trucks backing up with loads of dirt, rock, concrete and other construction materials, it has issued an order requiring trucks to be equipped with a warning signal to be sounded while backing.

So that the driver will keep his new responsibility in mind, the division has ordered 20,000 stickers, suitable for posting inside the truck cab, with the reminder: "Sound horn while backing."

Pennsylvania plans turnpike extension

123-mile branch to run northward through mining region to N. Y. border

Initial contracts may be let this fall for construction of a 123-mi branch of the Pennsylvania Turnpike, which would run northward through the state's anthracite region to the New York State border for eventual connection with the N. Y. Thruway near Binghamton.

Route surveys are expected to be ready for the turnpike commission's consideration in another week. Preliminary estimates place cost of the northeastern extension project at $125 million.

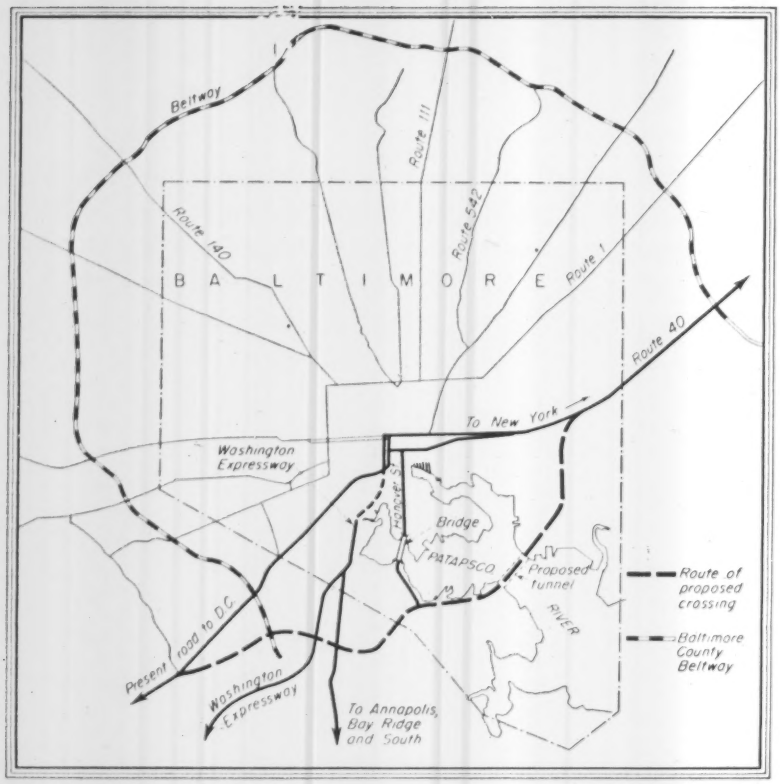
Under enabling legislation passed two years ago, the extension could link with the present 327-mi east-west toll superhighway at any point between the Susquehanna and Delaware Rivers. Gov. John S. Fine's previously stated hopes of linking the Wilkes-Barre-Scranton area with Philadelphia's port indicate that the link is likely to be near the Quaker City.

In anticipation of getting the northeasten extension under way, Governor Fine recently signed legislation permitting surveys of a proposed off-shoot route from the Wilkes-Barre-Scranton area across the Pocono Mountains toward New York City, probably ending in the vicinity of Port Jervis. New Jersey has tentative plans for a toll highway to the Delaware below Port Jervis.

• **New road**—Another toll road was authorized by the legislature. It would be a continuation of the N. Y. Thruway across the northwestern neck of Pennsylvania to the Ohio State line. At Erie, Pa., it would connect with a toll road from that city to the present Pennsylvania Turnpike near Pittsburgh, already authorized.

Meanwhile, the turnpike commission is proceeding with construction of a $65-million, 33-mi eastern extension of the turnpike to the Delaware River near Edgely. This section, scheduled to be completed next year, eventually will link with the New Jersey Turnpike by a new bridge across the Delaware.

As plans for extending the turnpike in all directions multiplied, so did traffic on the present 327-mi east-west route. According to the turnpike commission, the July volume of traffic—1,347,443 vehicles—hit an all-time high. It surpassed by 10,860 vehicles the previous monthly record of last August.



Work begins on Baltimore tunnel plans

Sunken tube method to be employed; 10-mile approaches to provide key highway link—cost put at $77 million

Consulting engineers are getting to work on plans for the Baltimore harbor tunnel project, which will involve construction of two 1.7-mile underwater tubes and 10.3 miles of approaches.

The tunnel will connect Baltimore's two major industrial sections of Canton and Fairfield, about four miles below the center of the city on the Patapsco River (ENR July 16, p.22).

The route was selected by the Maryland State Roads Commission in preference to an "inner harbor" Fort McHenry-Canton crossing favored by city officials. However, the city officials have given full blessing to the state plan. Furthermore, the state has agreed to finance the entire project, where originally it planned to pay only for the tunnel work.

Previous unofficial estimates have placed cost of the project at $70 million. But last week state officials indicated the expenditure might be in the neighborhood of $77 million.

Tube sections will be fabricated on shore and sunk in a prepared trench along the harbor bottom, crossing under the port's main shipping routes. The main channel in this area has a depth of 40 ft and there are plans for deepening it. Each of the two tubes will contain a two-lane roadway 22 ft wide.

The 12-mile tunnel route will constitute a by-pass across south and east Baltimore. It will have connections with the Annapolis and Chesapeake Bay bridge route to the south, the new Baltimore-Washington expressway, and Route 40 to New York. Eventually it will be tied in with the proposed Baltimore County beltway. (See map).

It is anticipated that heavy trucks will be banned from the Baltimore-Washington expressway and that the present Route 1 to Washington will become a truck route. The tunnel route also is linked to Route 1.

Tolls will be collected for the tunnel crossing but approaches will be freeways. Surveys have indicated a potential tunnel traffic volume of 40,000 cars per day.

Tunnel design is being done by Singstad and Baille of New York. Other consulting firms involved in the project are J. E. Greiner Co. and J. K. Knoerle Associates Inc., both of Baltimore. Coverdale & Colpitts of New York have been engaged for traffic surveys.

A key factor in favor of the state's harbor crossing plan over the city's proposal is that it would relieve Baltimore's Hanover Street of considerable traffic. This street, carrying traffic to and from Annapolis and the Chesapeake Bay bridge, long has been regarded as the city's worst bottleneck for through traffic. And, there's a drawbridge on the street to add to the congestion. The route favored by city planners, while able to accommodate east-west cross-town traffic, would not have relieved the over-taxed bridge situation.

The Fairfield-Canton tunnel will be about a half mile longer than the crossing proposed by the city. But, say state officials, the cost will be little if any more because the city's proposed project would have required a driven tunnel.

Award $8.6-million contract for drydock construction

The Navy Department last week awarded an $8.6-million contract to Corbetta Construction Co., New York City, for complete reconstruction of a 60-year-old wooden drydock at Brooklyn Navy Yard.

The existing structure—known as Drydock No. 3—is a Simpson-type timber graving dock, built in the mid-1890s. It will be demolished except for its timber bearing piles which will be utilized for the new structure. The new dock will have an overall length of 765 ft, a depth of 31.8 ft below mean low water, and will be 116 ft wide between the vertical sills. Since the new dock will be 85 ft longer than the old, and 5 ft deeper, a cellular cofferdam will be constructed at the river end.

The 125 ft of the outer end of the new dock will be of gravity design, with a reinforced concrete floor slab 14 ft thick, carried on 14-in. bearing piles. The remainder of the floor slab will be of relieved-type design, varying from 4 ft to 4 ft 6 in. in thickness, resting on 2 ft 6 in. of well-graded sand and gravel. Water percolating through this bed will be carried off by 8-in. headers, spaced 12 ft on centers, emptying into dock gutters. The dock will accommodate all but the heaviest cruisers and battleships.

The Corbetta contract is for the entire job, less the inner 80 ft at the head of the dock, and not including craneways and similar appurtenances. Parsons, Brinckerhoff, Hall and Macdonald of New York are consulting engineers on design to the Bureau of Yards and Docks.

Massachusetts turnpike route selected

$200-million toll road from Boston to N. Y. State line will have link with Wilbur Cross, Merritt Parkways

The Massachusetts Turnpike Authority has selected a 123-mile route for the proposed $200-million toll highway from Boston to the New York State border. Work is scheduled to begin next spring.

In order to avoid a threatened delay over route details, the turnpike authority has tentatively set the Boston terminus of the highway outside the metropolitan area. Starting point, according to present plans, will be on Route 128 in Weston. Route 128 is a belt highway around the Boston metropolitan area.

From the interchange at Route 128 for a distance of about 10 miles to Framingham, the turnpike will consist of six 12-ft lanes with 10-ft shoulders. From there west, the highway will be four-lane to the New York line near Stockbridge. It is expected to connect with the New York Thruway at that point.

The 123-mile route will have 13 interchanges, one of the key connections being at Sturbridge where it will link with Route 15 to the Wilbur Cross and Merritt Parkways in Connecticut.

All bridges between Framingham and the Sturbridge interchange will be six-laned, even though the highway is to be four-lane initially. Route plans call for 177 bridges, of which 127 will be at cross roads and the remainder at streams, railroads and interchanges.

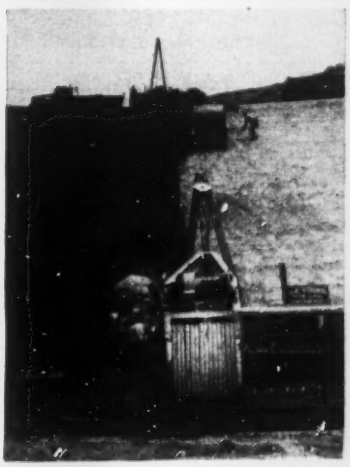
Turnpike Authority Commissioner William F. Callahan stated last week that his agency will continue to study the problem of carrying the turnpike from the Route 128 interchange to the Boston line.

The turnpike authority already has been confronted with strong protests from immediately adjacent suburban towns, including Brookline, Newton, Needham, Wellesley and Weston. In these communities, officials are alarmed over prospective loss of taxes and there is resistance among property owners along the proposed right of way.

Hearings will be held in four counties on the present plan but no significan protest appears likely. Approval of the State Public Works Department also is expected without much further ado.

The turnpike will be the backbone of a comprehensive, multi-million-dollar state highway improvement program (ENR July 16, p.26).

GREEN VERDUGO RESERVOIR with 32.5 million gallons capacity was built in a small canyon 15 miles from downtown Los Angeles. Control of inflow and discharge is by the inclined tower on the far slope.



SPREADING HOPPER'S movement on the slope controlled by tractors, one on the rim and one at the bottom.

Novel paving method proved its worth on reservoir job

A shop-built bottomless hopper was used to spread asphaltic paving material on the slopes of the Green Verdugo Reservoir, recently completed by the Los Angeles Department of Water and Power. The method proved to be efficient from the viewpoint of getting uniform distribution.

Another noteworthy feature of the project was the use of an inclined inlet-outlet tower resting on the sloped side of the reservoir. The inlet line, fed from the Los Angeles River aqueduct, terminates in a 36-in. circulating line laid on the floor of the reservoir. The outlet line is served by three 24x48-in. sliding gates set in the face of the sloping tower.

The spreading hopper used in paving the slopes had a capacity of 17 tons. It was of steel plate mounted on 7-in. channel runners. A screed at the rear permitted adjusting the asphalt thickness from 1-in. to 5½ in.

Movement of the spreading hopper up and down the slope was controlled by crawling tractors, one at the top and one at the bottom. The top tractor also carried the hopper and belt conveyor used to transfer asphalt from delivery trucks to the spreading hopper on the slope.

Between 400 and 500 tons per day were spread in this way.

Compaction of the asphalt was done by two rollers, a 500-lb hot roller, 24 in. wide and 24-in. dia, and 4,800-lb cold roller, 48 in. wide and 42-in. dia. A winch on a truck was used to move the small one over the slope, and a tractor moved the larger one. Both the rollers and the spreading hopper were built in the shops of the contractor, Schroeder & Co.

'Hard money' policy, federal gas tax are targets at Governors' Conference

Michigan's Williams bemoans bond issue difficulties—South Carolina's Byrnes scores highway aid practices

Discussions of public works policy at the Governors' Conference in Seattle last week drew sharp criticism of the Administration's "hard money" policy from Gov. G. Mennen Williams of Michigan, who declared, "It is having a serious adverse effect upon the financing of public schools and other necessary improvements."

Equally pointed was an attack on the federal gas tax and highway aid program by Gov. James S. Byrnes.

In his discussion of difficulties in financing public works, Gov. Williams cited the necessity of postponing construction of the $96-million Straits of Mackinac Bridge because of an unfavorable bond market (ENR June 25, p. 25). He also noted that a major bond issue of the Michigan Consolidated Gas Co. for expansion failed.

• **Sees deflation ahead**—"Many governors have pointed to the desirability of the states and the local communities undertaking to help themselves with less reliance upon federal aid," said Governor Williams, "I agree that this is desirable. But what are we to say to a city or a school district which tried to help itself, to make needed improvements in its own services, and finds that it can't get financing because the federal government has boosted interest rates?

"Obviously if the interest rate for these public projects is substantially increased, the people will pay the bill in a greater burden of taxes for these improvements."

Declaring that the cease fire in Korea and the reduction of defense expenditures by the national government and of foreign aid funds point to deflation rather than to continued inflation, Gov. Williams asserted, "There is every reason to question a policy which seems to put the brakes on needed public improvements as well as private expansion, at a time when these things are likely to be sorely needed to take up the slack."

• **Scores federal aid**—On the federal-state highway relationship problem, Governor Byrnes declared: "The conditions that justified federal aid and federal control of highway construction no longer exist. If the federal government will withdraw its tax upon gasoline, leaving this field to the states, I am sure the states can build more highways for less money."

Byrnes called upon the governors to oppose any new federal aid projects and "consider what existing federal grants can be abandoned, provided the federal government will restore to the states sources of taxation that will enable them to continue meritorious services." He declared, "You are certain to have extravagance whenever a government, state or county, receives a grant of money which officials can spend without having the responsibility of collecting the money through taxation."

• **Maryland program cited**—Gov. Theodore R. McKeldin of Maryland criticized the "systems of highway planning" which, he said, "have progressed little, in many instances, since the times when the opening of a new flour mill was the controlling inducement for the opening of a new road."

As an example of corrective action in this field, he cited what is being done by an advisory council he appointed to work with the state roads commission and its staff in devising "a real program—a program of roads that were going somewhere with a reason for going there." As the result of this program, reviewed by outside press, radio, television and public meetings, " necessary legislation was passed for a 12-year program which will give Maryland 3,450 mi. of newly constructed roads at a cost of about $568 million."

California seeks to end confusion in state agencys' building codes

California soon will have a 13-member State Building Standards Commission at work trying to eliminate duplication and overlapping in state building regulations. The new body was created by a legislative act that becomes effective Sept. 9.

Meantime, the state's Division of Architecture will hold hearings this month on a revised set of earthquake safety regulations for school construction. It hopes it will be able to have the new school building code in print by Jan. 1.

State Architect Anson Boyd said the new set of regulations is designed to clear up "discrepancies and conflicts" in the present code. The new plan was worked out by an advisory board in line with research sponsored by the state.

The Building Standards Commission has until March 9 to publish a state building standards code to eliminate present conflicts and overlapping in the regulations that now are being issued by at least 10 individual state departments.

Six members of the commission will be appointed by the governor. They will include three from the building industry and three representing local governments. Other members will be the state architect, the fire marshal, and directors of public health, mental hygiene, social welfare, agriculture, and industrial relations.

Preamble of the law states that it is not intended to substitute the commission for "the responsibilities now vested in the various state agencies." These agencies are to continue to prepare building regulations, but they will not become effective until they have been approved and published by the commission.

• **Legislature started it**—The law stemmed from a legislative investigation into state building regulation. Declared the investigating committee in its report: "If overlapping regulations add only one percent to costs in the building industry, the unjustified cost to builders runs into millions of dollars a year.

"The hostile attitude of so many builders toward building regulations and building officials," the committee reported, "can be easily understood in light of some of the builders problems.

"1—Most building regulations are too detailed and written in too difficult language to be readily read and applied on the job.

"2—Many of the regulations are out of print. It is annoying to be held subject to a rule which cannot be readily ascertained.

"3—Many of the local regulations are out of date. A city adopts the uniform building code, with modifications. Later the uniform building code is revised, but the city fails to adopt the revised edition. The harassed builder must not only know what modifications each city has adopted but must also remember which edition they approved.

"4—There are conflicts in the detail of regulations.

"5—Because of the multiplicity of agencies, there are also added costs for a multiplicity of inspections and approvals."

Administration to push slum clearance but will tighten subsidy regulations

Cities requested to make sure of code enforcement, rehabilitation possibilities before seeking grants

Congress and the White House are giving full support this year to the slum clearance and urban redevelopment program as set up in the Taft-Ellender-Wagner Public Housing Act of 1949.

Despite criticism by the U. S. Chamber of Commerce and opposition by some real estate interests, the new Administration is standing solidly behind the federal subsidy plan to encourage rebuilding of blighted areas in U. S. cities (ENR Dec. 25, p.22).

As evidence of their solid support, both the White House and the Congress went along with the original Truman budget request for $20 million in new appropriations this year for capital grants to redevelopment projects. Congress merely added a warning note to the appropriation bill instructing the administrator:

(1) To look into local enforcement of codes for city-wide health, sanitation and safety of dwellings.

(2) To allow full opportunity for use of FHA-insured mortgage loans to repair and improve existing buildings before signing any federal-grant contract to assist demolition and site clearance for redevelopment.

• Code enforcement stressed—Even without these instructions, Administrator Albert M. Cole and his new program director, James W. Follin, would have stressed city-wide code enforcement and rehabilitation of existing dwellings. Emphasis on those two points meets one of the main objections of the realtors that the cities are prone to use the redevelopment program as a substitute for compulsory repair of substandard dwellings and as an opening for construction of federally subsidized public housing.

Some changes in the program almost certainly will be recommended next year in legislative proposals that Cole is getting ready for Congress. The changes are not expected to alter the basic character of the program; they will be aimed rather at making it more effective.

Projects have been slow in getting up to the construction stage as the Chamber of Commerce pointed out in its critique. The chamber blamed:

(1) The cities hesitate to assemble properties for a slum-clearance site until they have a definite contract from a private redeveloper.

(2) Investors are reluctant to make a commitment and then wait for the city redevelopment authority to acquire and clear the land. That is especially true when the site plans call for construction of rental housing, which holds little attraction as a long-term investment under present tax laws, both local and federal.

• Hope to cut red tape—Housing law amendments cannot change the tax statutes, but they can speed up the redevelopment program in other ways, as some officials have pointed out. One of these would be to reduce the amount of federal supervision required in carrying out local programs. Because the federal government says two-thirds of the write-down cost of the cleared and prepared site—when the site is sold at its reasonable resale value—the Housing and Home Finance Agency has to watch every move the local authorities make to see they don't spend a dollar more than necessary in planning, land buying, demolition or public improvements. This close supervision by Washington slows down all steps of the process.

Wide World photo

ST. LAWRENCE POWER PROJECT PLANNING gets under way following the Federal Power Commission's action in granting a license to the Power Authority of the State of New York to participate with Canada in the $316-million venture (ENR July 23, p. 22; July 16, p. 21). Officials of the Power Authority and the Ontario Hydro-Electric Commission met in New York City last week for preliminary discussions. Left to right, Franklin J. Leerburger, New York consulting engineer; Hydro-Electric chairman Robert H. Saunders; Otto Holden, assistant general manager of engineering for Hydro-Electric; and John Burton, chairman of the New York State Power Authority.

20,000 limit gives PHA tough decision

Charles E. Slusser, the new Public Housing Commissioner, faced a tough problem this week. He had to decide which cities could start new housing projects this year—within the limitation of 20,000 units set by Congress.

Some cities are sure to be hurt. Only one-third of the new units that the federal government has agreed to subsidize can be started under this year's limited program. The Public Housing Administration has made annual contributions (rental subsidy) contracts with 90 local housing authorities for projects containing nearly 56,000 units. Some 36,000 will have to go on the deferred list.

There are bound to be political repercussions to Slusser's decisions. But he aims to make his determination on practical grounds. PHA field offices have been rating projects for him on a basis of local need for the housing and ability to start construction promptly. Those criteria include consideration of the housing needs of minority groups and of projects that are farthest along in site acquisition.

Subsidy contracts with local authorities for new projects vary widely in size. Brussels, Ill., for example, has a contract for four units, while Chicago has contracts for 8,000 and New York for 9,000. In between are contracts ranging from six units to more than 2,500.

A number of the smaller localities could have their projects authorized within the 20,000 limitation and still leave enough over for starting the top-priority jobs in the big cities.

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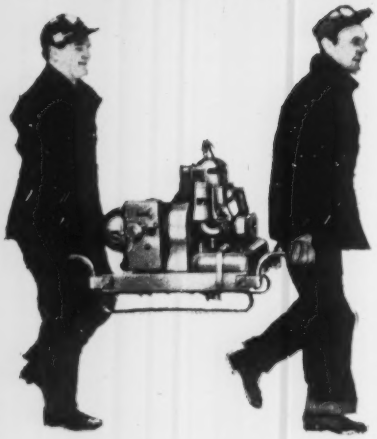

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White House at bay on T-H

Another bitter fight on Taft-Hartley labor law revision is in prospect in Congress next year.

Twice the Senate has put through Amendments—in 1949 and last year—only to have them die in the House of Representatives.

One amendment did pass in 1951—elimination of union shop elections. This year congressional committees held extensive hearings, but Congress put off action until the next session while waiting word from President Eisenhower as to just what he wanted done.

• **White House retreats**—A draft of a proposed Message to Congress by Eisenhower leaked out and raised a storm of protest from Taft-Hartley supporters. They complained vehemently that the draft was too pro-labor and weakened the law, causing the White House to deny that the "draft" was anything more than a "working paper, not even approaching the semi-final stage" of an actual message."

The draft contained most of the proposals of Secretary Durkin, on leave as president of the AFL Plumbers & Steamfitters.

There were 19 points in the document. Only one proposal seemed clearly to favor management. It would prohibit unions (and employers, too) from insisting on bargaining during the term of a contract unless the contract specifically permits it. The others were mostly in favor of labor, some neutral.

• **Would ease closed shop**—Those which seemed to be most favorable to labor would all but eliminate the secondary boycott ban, bring more marginal supervisors under union jurisdiction, ease the closed shop ban in construction and other casual employment industries, permit unions to bar from employment any members who disclose "secret" union information, drop the non-Communist affidavit for union officials and others.

Senator Robert A. Taft's death is expected to make a big difference in what happens to Taft-Hartley. He was its strongest defender, yet one of the most willing to make changes.

Taft's followers fear that "the Dewey crowd" will have greater influence at the White House, and that this will mean changes in the labor law more favorable to organized labor.

—What was in store for construction—

The suggested "draft" of a White House Message to Congress on Taft-Hartley contains among its 19 points at least six proposed amendments which seem to have special application to the construction industry:

• Referral of workers—This proposal would "make it clear" that "an employer may notify a union that job opportunities exist in his plant, or give the union a reasonable opportunity to refer qualified applicants for employment."

• On worker qualification—This one would "make it clear" that an employer and a union may "enter into an agreement specifying the minimum training or experience qualifications that will be required for employment or respecting priority in opportunities for employment based upon the experience of the employee. . . ."

• On casual employment—This would permit in construction, amusement, maritime and other industries with casual employment, "pre-hire contracts" in which the union is recognized as bargaining agent. Union shop clauses in such contracts could require a worker to join the union in seven days instead, whereas the 30-day grace period would still prevail in other industries.

(The above three proposals all tend to undermine Taft-Hartley's ban on the closed shop.)

• On secondary boycotts—In this proposal the White House "draft" accepts the AFL building trades contention that all contractors on a project constitute a single employer and therefore an action against a general contractor aimed at subcontractor is not a secondary boycott. The exact language follows:

"The (Taft-Hartley) act as presently written prohibits as a secondary boycott concerted activities on a construction project that have heretofore generally been regarded as legitimate and justifiable. In these projects, all contractors are, in reality, engaged in a common undertaking at the project's site and should be recognized as one, integrated unit, for the purpose of applying the secondary boycott provisions; but under the present law this cannot be done. I recommend that the act be amended to exclude from the classification of prohibited boycotts concerted activities on a construction project."

• On mandatory injunctions—This proposal would eliminate the rule that the National Labor Relations Board must seek an injunction against every secondary boycott, and make such action discretionary as it is in other unfair labor practice situations.

• On state laws—This one would nullify "right to work" state laws in a dozen states by making federal law paramount, although preserving to the states the right to protect health and safety in any labor dispute that creates a state emergency. (Most "right to work" state laws prohibit denial of work on the basis of union membership. Taft-Hartley prohibits the closed shop under which an employer must hire only union members, but permits a union shop under which a person already employed must necessarily join a union in order to keep his job.)

Election day confusion may be cleared up

Representatives of California's construction industry are heralding the new state law which is expected to correct abuses caused when workers take two hours off each election day as a matter of right rather than actual voting need.

Under the new bill, if an employee has—outside of working hours—four consecutive hours in which to vote, he is not entitled to time off. If he has less than four hours, he may take up to two hours from work without loss of pay.

Construction firms have been protesting the old law which for 60 years has entitled voters to two hours off with pay each election day. John Svnon, representing the Associated General Contractors testified before recent legislative committees that confusion and a heavy financial burden were caused by workers leaving their jobs any time they wanted on election day.

Strike roundup

Western 'vacations' end; progress slow in New York

Three long-enduring wage disputes in the construction industry reached different stages of settlement last week under pressure from a number of fact-finding groups ranging from mediators, arbitrators and city committees down to wives of jobless workers.

How much ground has been gained by negotiators is a question yet to be answered. Southern California plumbers and pipefitters are still unsatisfied with minimum rates won. Cement material firms in St. Louis have not met truck drivers' demands. In New York, the wage dispute between building material drivers and employers became a secondary problem when teamsters had refused to grant their union leaders the right to make any settlement.

• **New York City**—Mediators—members of a citizens' committee appointed by Mayor Vincent R. Impelliteri—have come up with recommendations for ending the five-week-old strike by 1,200 sand, gravel and concrete truck drivers. Terms include an hourly wage increase of 40 cents plus a 5% employers' payroll contribution for welfare and pension funds. Now it is up to employers' negotiators and the teamsters' union to consider the suggestions.

The union has been holding out for 75 cents an hour over the basic pay of $16 a day, plus 10% for benefits. Early settlement efforts have been stalemated by friction within the union; construction workers consistently have refused to authorize local president John J. O'Rourke to accept any compromise agreement.

• **St. Louis**—The construction industry remains at a standstill as the wage dispute between 550 striking AFL truck drivers and concrete material firms nears the third month of deadlock. Already some 27,000 building craftsmen have been forced into unemployment as a direct result of this costly tieup.

Apparently there is no settlement in sight. So far—since the strike started May 19—Mayor Raymond H. Tucker, a circuit court grand jury, and wives of jobless workers have tried in vain to find a solution.

The union is seeking an immediate 25-cent hourly increase over present wages ranging from $1.85 to $1.90. Employers have offered 10 cents now and an additional 10 cents next May 1.

• **Southern California**—An arbitrator's decision has settled a wage disagreement between plumbing contractors and some 11,000 AFL plumbers and pipefitters in the area from San Luis Obispo to the Mexican border. Even without authorized strike action, work has been curtailed by voluntary "vacations" taken by individual laborers.

The decision by San Diego attorney George Cheney raises the basic hourly scale from $2.90 to $3.95 (retroactive to July 1) and up to $3.12½ on Sept. 1. By agreements reached before arbitration, employer groups added 2½ cents to a 7½-cent welfare fund contribution.

The union accepted the arbitrator's decision but emphasized that the new rates were minimums and indicated that employers would have trouble finding men willing to work at that wage. Arbitrator Cheney was called in after the union refused to lower its demand for $3.15 and Plumbing, Heating and Piping Employers' Council balked at more than $3.05.

Closed shop pacts hit

Virginia is cracking down on what officials consider widespread violation of the "right to work" law by contractors and building trades unions.

Attorney General J. Lindsay Almond, Jr., asked the Law and Equity Court at Richmond for an injunction to keep Richmond area plumbing contractors from making a closed shop contract with a plumbers union.

This is the first action by the state to enforce the law which makes it contrary to public policy to require membership in a union as a condition of employment. There are no criminal penalties. Almond indicated that if this "test case" does not end the violations, action will be taken against other contractors and building trades crafts.

The court move was directed by Gov. John S. Battle, who had received a report from Almond about the "widespread violations" while attending the Governors' Conference at Seattle.

Meanwhile—just a few states away—this same line of thinking against forced union membership showed up again. In Tallahassee, Fla., a contract between journeymen plumbers and a Jacksonville plumbing contractor was voided by the State Supreme Court on the basis that the contract provided for a closed shop.

Fringe activity

Health plan in court; Arkansas tiff settled

Common Pleas Judge Thomas J. O'Connor has modified—but refused to lift—a temporary injunction restraining the Hospital Service Assn. of Toledo, Ohio, from canceling its Blue Cross-Blue Shield insurance contracts with local members of AFL building trades unions.

Behind the association's cancellation move was this fact: On Aug. 1 some 10,000 construction workers went under the unions' own area-wide insurance plan. As a result, Blue Cross says it cannot continue coverage of these workers on either a group or individual basis because only "poor health-risks" would sign up under both plans.

Union spokesmen said that the cancellation order was unfair because it would cut off coverage for many workers who are not eligible yet to come under the union program. This plan, financed by employer contributions of 7 cents an hour, requires that a worker have at least 350 hours of work in the construction industry (within the past three months) before being eligible to receive benefits.

Blue Cross took similar action on its contracts in the electrical construction industry June 1, after AFL International Brotherhood of Electrical Workers formed a union insurance plan.

• **Peace in Arkansas**—After investigating complaints regarding payment of a $3.75 daily fringe benefit to metal workers at the Pine Bluff, Ark. arsenal, Comptroller General Lindsey Warren says that his office has no reason to interfere in the matter.

Warren looked into the situation at the request of Arkansas congressional members. Little Rock metal contractors had complained that the payment by Pine Bluff contractors—Blaw-Knox Construction Co. and McCreery Bros. —was unauthorized. Warren answered that approval of fringe benefits comes under the Chief of Army Engineers' authority, and that since payments to sheet metal workers in the area are recognized and customary, the General Accounting Office would have no cause for questions.

The contractors also complained of "collusion" between the union and the Pine Bluff companies to hire more sheet metal men than were needed on the job in order to deny workers to the Little Rock contractors.

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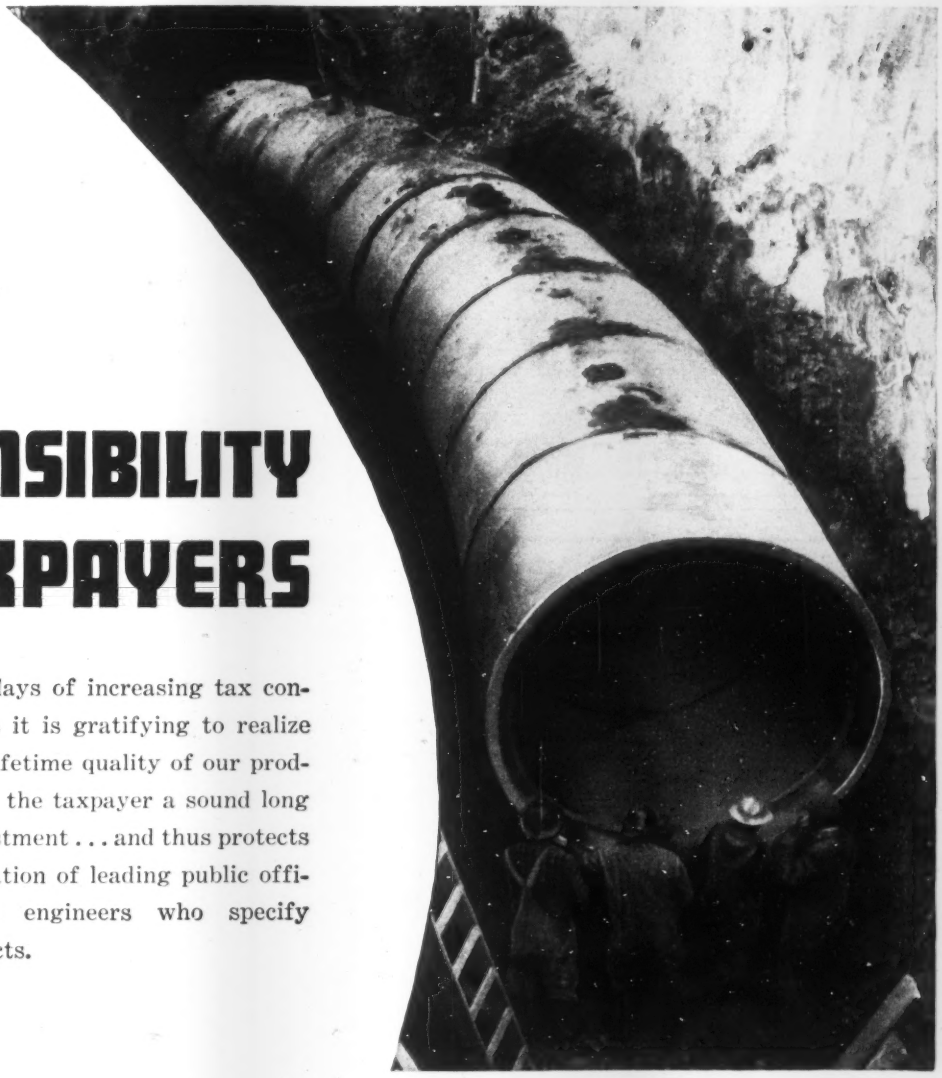

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Construction in Casablanca gives old city a modernistic skyline

CASABLANCA, principal city and seaport of French Morocco, is rapidly acquiring one of the most spectacular skylines in the world.

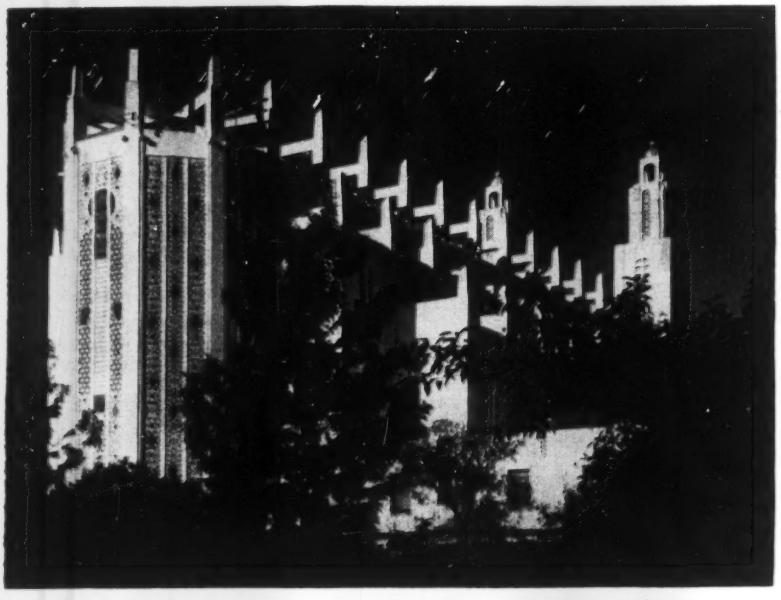
Mushrooming out of the mass of small, low buildings, whose monotonous flatness during nearly all of the city's 500 years of existence was interrupted only by the minarets of the mosques, are dozens of large and tall structures which in modernistic appearance and advanced engineering are unexcelled by what any other city has been able to produce since the war. It is almost as if the able French architects and designers, despairing of finding use for their talents in the homeland, have chosen this territorial metropolis as a stage for a competition in modernistic building.

Starting with 10 stories, tall hotels and office buildings have now reached 17. The twin towers of a unique reinforced concrete cathedral contribute to the transformation from a horizontal to a vertical effect in the skyline, and even low-income housing developments, although built in the same squat, flat roof style of the ancient walled villages of the past, are given modernistic flourishes that are arresting. In the meantime, to serve the increasing population with recreational facilities, the government erects a stadium and a great exhibition hall, each of which offers its own architectural and structural novelties.

Some of these buildings which have

GOTHIC BUT MOORISH

Architecturally unique among structures for Christian worship, the Roman Catholic Cathedral of Casablanca (l'Église du Sacre Coeur) follows the Gothic pattern —high central nave with two progressively lower aisles at either side—and even presents a suggestion of flying buttresses. But its lacework of stained glass windows in triangular and stellar motifs and the shape of its entrance arches are in the Moorish tradition. And both these architectures of the past are given modern expression by building the 125x250-ft structure in reinforced concrete.



contributed to Casablanca's continuing boom are pictured in these pages. Some of those responsible for the buildings are architects A. Dangleterre and M. Lossier who collaborated on the stadium, whose structural design was the product of the firm of Hennebique & Ziegler and which was built by the Quillery Co. For the cathedral Adrien Laforgue was the first architect and P. Bousquet the architect for the completion stages. R. Debroise was the engineer, and the whole project was under the supervision of Paul Tournon, the government's architect for civilian buildings and national monuments.

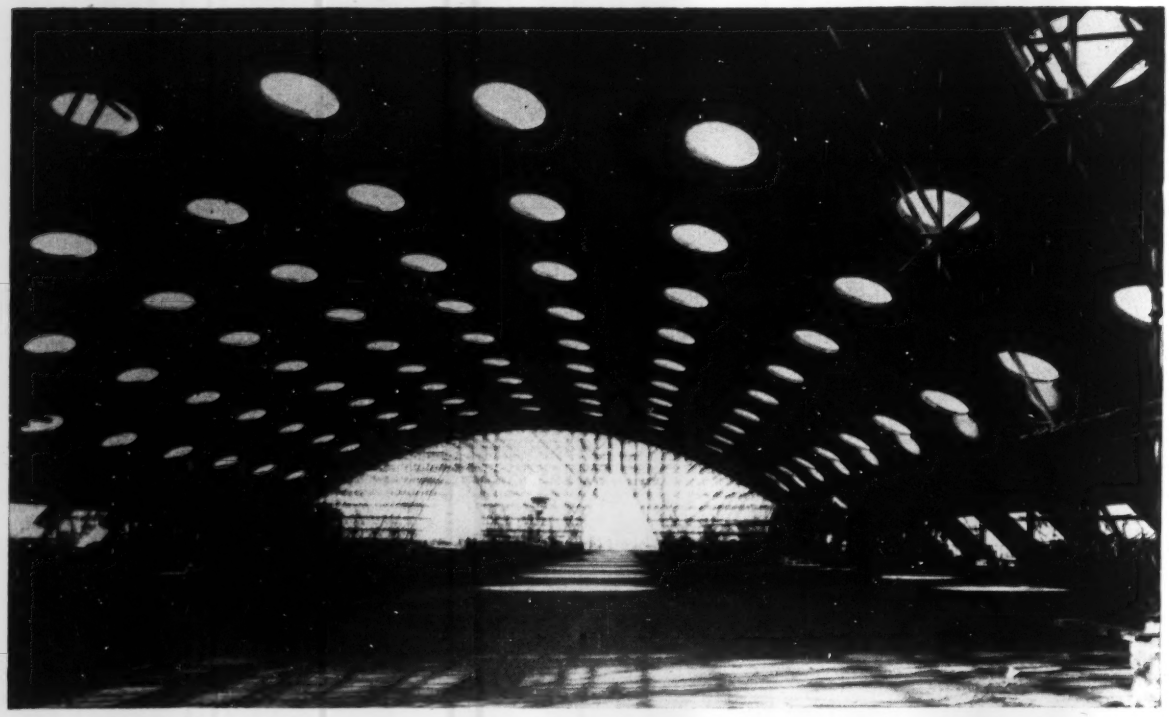
TALLEST BUT TYPICAL

The Liberte Building, for offices and apartments, rises 17 stories, a new record, but there are a dozen others whose 12 to 15 stories dominate their surroundings in the same manner. Each vies with the others to present the most spectacular assembly of curves, cantilevers and fenestration.

FOR SPECTACLES AND FAIRS

Concrete arches of 262-ft span support a 4-in. roof pierced with 9-ft diameter skylights in Casablanca's new 4½-acre exposition building. The roof extends horizontally at the sides to bring the total width to 292 ft. The maximum height at the crown is 59 ft.

TO SEE WHAT THE BUILDING LOOKS LIKE INSIDE TURN PAGE.



PIERCED ROOF PAVILION

From inside, Casablanca's exposition building has an out-of-this-world look. The great roof, with its 25 arch ribs, five of which are double to provide for temperature movements, was completed in 12 months using two sets of tubular steel centering mounted on rails and adjustable vertically by jacks. The timber forms were steel lined to assure a smooth finish and to aid in decentering.

BOLD CANTILEVER

In Casablanca's new sports stadium (le Stade d'Honneur) a concrete roof with a 115-ft overhand and a 37-ft anchor arm will permit 10,000 of the 30,000 seated spectators to get out of the sun. Each of the five sections into which the 410-ft long roof is divided is carried by a pair of massive reinforced concrete trusses balanced over supporting columns and anchored at the rear by long reinforced concrete tie members connected to buried counterweights. Roof sections were poured on a 70-ft-high movable tubular steel centering.

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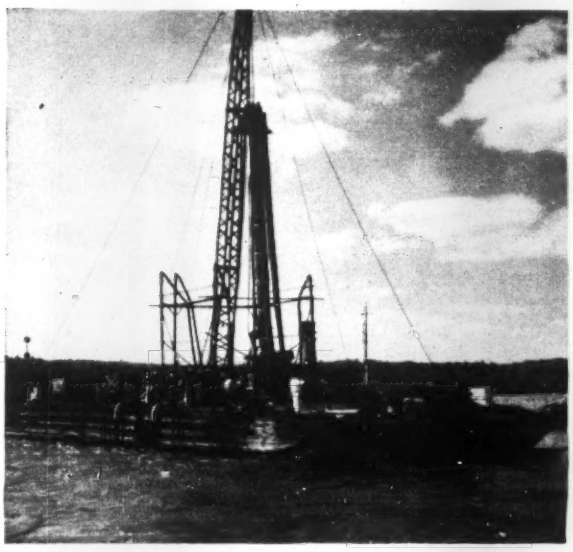
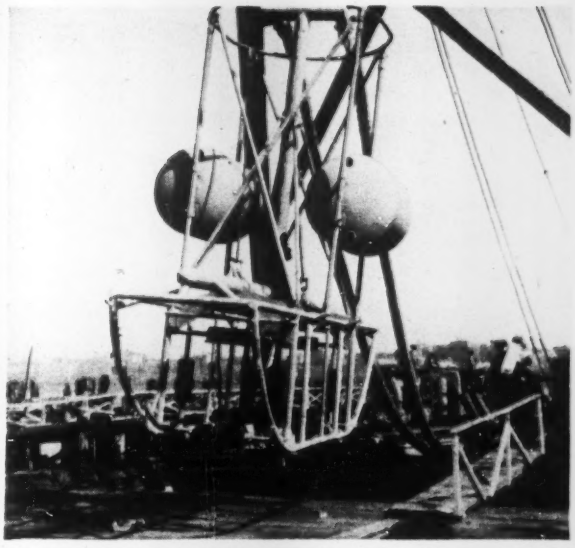




JETS—At New York's uptown Hudson River pipeline crossing it took three tries to get the line properly placed. First try included spud jetting rig (left), which stuck in the mud. Third time, jet trencher (right) burrowed pipe to correct depth.

Natural gas for New York and New England—

Pipeliners' nightmares are over

Robert H. Dodds
Associate Editor

Last month, when Transcontinental Gas Pipe Line Corp. finally succeeded in correctly positioning its uptown line into New York City, a three-year story of three trouble-ridden underwater crossings came to a close.

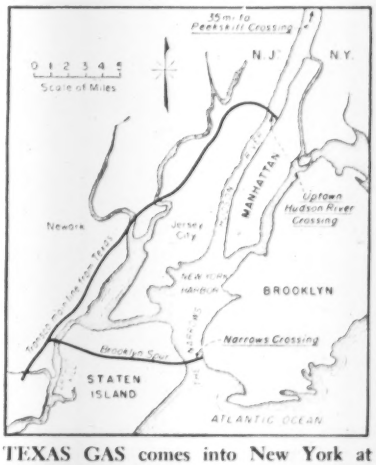
All three crossings are in the city or its vicinity. Each one lies in the geologic gash that forms the Hudson River Valley and proceeds beneath New York Harbor and far out to sea.

Farthest downstream is the Narrows crossing, a spur of the Transcontinental line connecting Staten Island with Brooklyn. Next upstream is the uptown crossing, which brings Transcontinental's main line to the Manhattan Island shore of the Hudson. The third is 40 miles farther north, near Peekskill, N. Y. Built for Algonquin Gas Transmission Co., it is a New England connection from the wartime Big Inch line.

Each crossing had its expensive mishaps, but the magic common denominator was the ingenuity of Sammy Collins, an underwater crossing specialist from Victoria, Tex. (See p. 62). His buoyancy tanks helped place the pipes at Peekskill and the Narrows, and a jet-trencher, invented by Collins, lowered the 26-in. uptown line as much as 17 ft down to required depth.

• Two previous tries—This was the third try on the uptown line. The first and second were described in ENR April 19, 1951, p. 32. After the first attempt failed, the second one partially succeeded—enough so that the line could begin serving New York City natural gas from Texas.

The shortcoming after the second try was the line's position. Navigation requirements had dictated placement 20 ft beneath river bottom, or 50 ft below the surface, whichever was deeper. Laid by pulling it into a trench dredged to the necessary depth, the pipe soon was found to be too high throughout about half its 4,800-ft length. It is likely that trench muck, fluid in consistency and weighing 90 lb per cu ft, "floated" the pipeline upward (although as laid, the pipe was designed to have negative buoyancy in water).

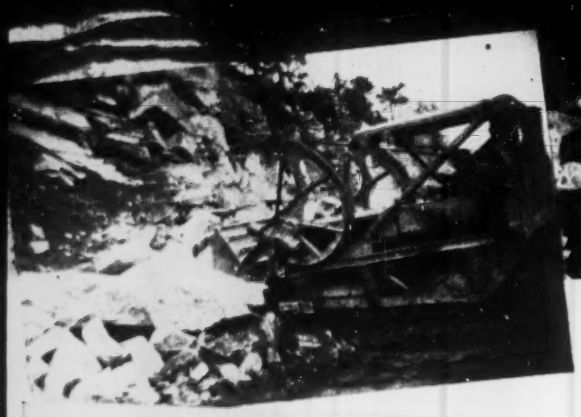


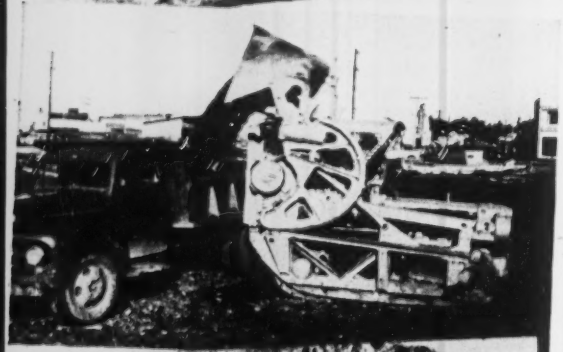
TEXAS GAS comes into New York at Narrows between Staten Island and Brooklyn; also at uptown Manhattan location.

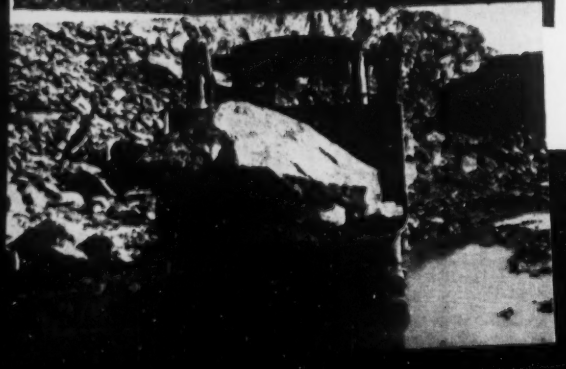
Transcontinental got to this pipe-lowering job this spring, 2½ years after the pipe went into service, and after the tough Narrows crossing had been made. In addition to lowering the pipe, Transcontinental attached river weights in quantity sufficient to establish a negative buoyancy of 7 lb per lin ft in 90-lb per cu ft fluid.

• Jets work this time—Ironically, the successful pipe-lowering method applied air-water jetting principles, which also had been tried in the first attempt at a crossing three years ago. The original idea was to cut a trench with a "spud jet" suspended through a well in a barge deck. Shooting air and water in several directions from its lower end, the spud was to "saw" a slot in the bottom as the barge was winched back and forth across the river. Then jets were to be attached at intervals along the pipe to assist it in lowering itself into the slot. Unfortunately, the river bottom was too hard to permit the first half of the scheme—the spud jet—to work, and the more expensive dredging and pulling approach was adopted.

Collins' successful jet trenching device surrounds the pipe and travels along it, undercutting a slot into which the pipe settles. Handled by a barge-mounted A-frame derrick, the trencher consists of a framework of welded piping, fitted with a series of jet nozzles front and rear. There are separate nozzles for air and for water, both of which feed through the piping of the frame. The water jets are set in a pattern aimed so as to cut and flush







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out solid material 3 to 4 ft below and ahead of the frame. The air jets aerate this cut material, which now is fluid, and set up a swirling action that helps carry it up and away.

The trencher operates in either direction on the pipe, only half of the jets working at a time. When the direction is changed, a valve, turned by a diver, diverts air and water to the jets on the other end.

Two sets of rubber rollers fit around the pipeline to hold and guide the trencher. The bottom roller of each set of four is hinged to open while the trencher is lowered onto the line; a diver latches the roller assembly onto the pipe. Two controlled-buoyancy tanks atop the framework keep the rig upright and regulate its uplift or weigh-down on the pipe.

The barge also carries air compressors and water pumps for jetting. Motion along the pipe is achieved by give-and-take on barge anchor lines.

For the uptown New York pipe-lowering work, Transcontinental used its own forces, engaging Collins and two of his men to supervise the operation of his jet-trencher. The trencher was attached to the pipe at a point where cover was thin, so the pipe could be reached with little digging. About nine full passes were made on the section that had to be lowered, with additional short passes where deeper cuts had to be made. Maximum water depth to proper pipe location was 80 ft.

The first pass with the trencher was slow—30 lin ft per 8-hr shift—because it had to remove an average 14 ft of overburden from the buried pipe.

• **Dredge relieves pressure**—To speed the work an Arundel Co. clamshell dredge was brought in to help remove the overburden. But, instead of the risky procedure of working right next to the line, the dredge dug two parallel ditches 30 ft away from the pipe on either side. Dredged to a depth of 20 ft below the pipe, these slots were to relieve squeezing pressure on the ditch cut later by the trencher.

After overburden removal, trencher progress was more rapid—100 ft per hour, or one complete pass each 24-hr day. The trench was deepened and the pipe lowered as much as 4 ft during a pass.

• **Buoyancy tanks**—This was the first time Collins' jet trencher was used in the New York area; smaller types had seen much successful service along the Gulf Coast. But another Collins device, the buoyancy tank with its patented release, had brought the Texan into the metropolitan limelight a year earlier. The tanks played a minor role in the latter part of the Peekskill cross-

NARROWS CROSSING was made by launching pipe lengths from a Staten Island street. Equalizing six-point launching ways, with two points floating, are at lower right.

ing, and they teamed with other Collins devices throughout the 1¼ mile Narrows crossing to make that project successful.

However, the Narrows crossing was not without its reverses. The first pull was snagged, and the winch line broke. Then, after the successful placement and before the dredged 25-ft trench was backfilled, a tanker anchor damaged the pipe. (The repair was made by raising the damaged section above water and replacing it.)

• **The successful pull**—Collins Construction Co. handled submarine and flotation work for Transcontinental at the Narrows. Also on the job were Samuel Gallucci & Sons, Inc., Corona, N. Y., the general contractor, and the Hallen Co., of Long Island City, N. Y., welding contractor. Because there was a better working site on the Staten Island side the pipe was launched from that end and pulled to the Brooklyn side, where a large winch, that had been designed by Collins, was anchored to do the pulling.

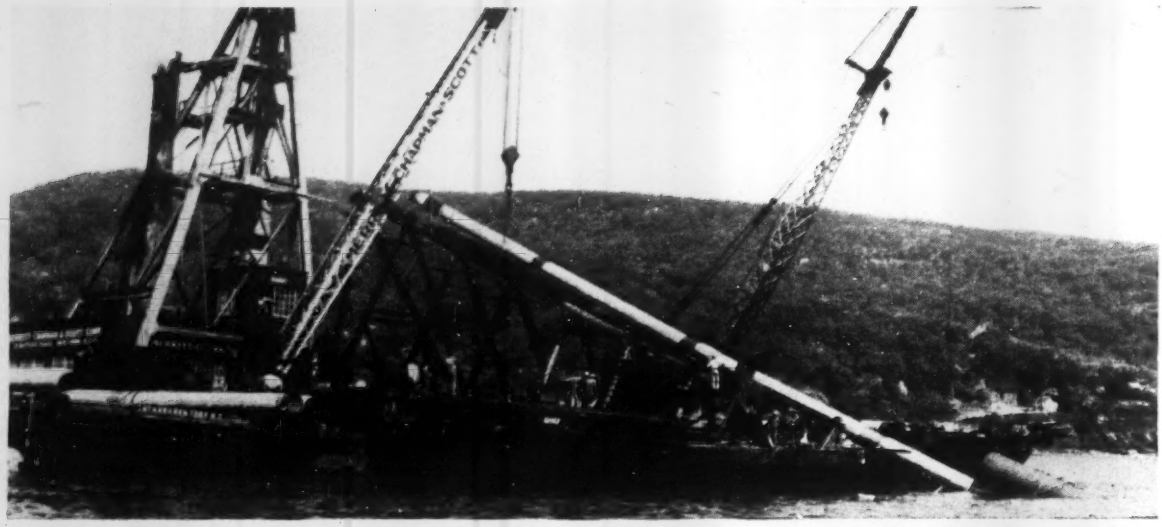
The Staten Island construction site was a street that intersected the shore at right angles. Eight pieces of 24-in. pipe 800 to 900 ft long were assembled alongside each other on skids adjacent to a narrow-gage railway that led downstreet, almost to the water's edge. At the upper end there was a holdback winch; at the lower end there was a launcher, devised by Collins, that supported the pipe on equalizer idlers at six points and minimized the bending stresses on the pipe while its full weight of 561 lb per lin ft was still acting.

Once the pipe was immersed, it had a negative buoyancy of 203 lb per lin ft, and during the pull Collins' buoyancy tanks reduced the weight to 6 to 10 lb per lin ft. The effect of the tanks was to minimize drag.

The tanks, or pontoons, were attached with steel bands to each pipe assembly before it was launched. Twenty feet long and 5 ft dia, they were spaced about 110 ft apart. Air pressure was put into the tanks to resist collapsing stresses in water down to 108 ft depth.

• **Float line**—A float line was connected to the levers of simple breaking devices on the pontoon-attachment bands. Lightly secured to the pontoon, the float itself could not rise to the surface until a wire-rope trip-line cut it loose. Then the float could be retrieved and its line hauled in to break the bands, releasing the pontoon without the aid of a diver.

But pontoon-release was one of the final operations. In launching, the first pipe assembly was skidded onto track dollies, fitted with pontoons and shackled to the main winch line from Brooklyn. The hold-back winch line was attached to the rear. (A dynamometer was put in this line so tension could be held down to values that would only counteract the pipe's ten-



PEEKSKILL CROSSING featured a skid-chute on a launching barge that backed away from pipe as it was lowered into the Hudson. Collins buoyancy tanks reduced effective weight of pipe so it did not sag dangerously before it reached bottom.

dency to over-run itself; thus excess work would not be imposed on the main winch.)

Now, shepherded by side-boom tractors, the pipe began to move. Its nose slid across the launcher and entered the water, as track dollies curved away onto a waterside tangent. When the pipe assembly's rear came abreast of the lower end of the assembly yard, pulling stopped, dollies were respotted on the main track, and a new assembly was skidded into position for welding to the first. Other preparations proceeded, and when all was ready, the second pull began. This process was repeated until the whole 1¼-mile line was resting in its 25-ft-deep trench. Best progress was the placement of two 800-ft assemblies in one day.

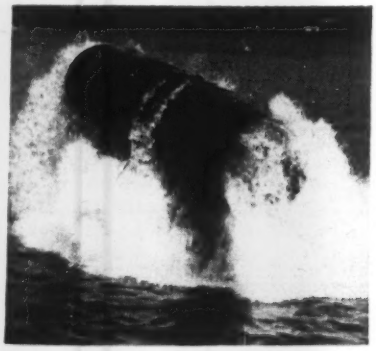
• **Pontoon release**—Perhaps the most spectacular part of the job came after the crossing was in place. Pontoons then were released. First, the tripline, which ran continuously under the light bindings holding floats in place on each pontoon, was hauled in, causing the floats to pop to the surface in succession across the Narrows. Then a work boat moved slowly from float to float, hauling on each line until the pontoon attachment bands were broken below.

As each pontoon was set free it rose and surfaced with a WHOOSH, then floated placidly until another boat took it in tow, together with the pontoons that already had surfaced in their ponderous parade.

• **M-C&S uses skid-chute**—Collins pontoons were surfacing with a WHOOSH near Peekskill in 1952, too, but not quite so rapidly. Their job, here, was to ease two 24-in. pipes onto the bottom.

Pontoons were released—about four of them in the course of a day—as soon as their section of pipe was on the bottom, because there was no pipe-dragging on this job. (The trip-line was not used here, the individual floats being allowed to rise as the pontoon descended.) Instead, the launcher moved. It was a barge-mounted skid-chute made out of the A-frame of an old floating derrick. Merritt-Chapman & Scott Corp., the contractor, had laid the A-frame on its side on the barge deck, giving the chute a launching angle of 20 deg from the horizontal.

• **Ice stops work**—The assignment here was to place two 24-in. lines each 5,200 ft long, in two 15-ft trenches 100 ft apart. Depth ranged up to 65 ft. Work had begun the previous fall, but it was stopped when a Hudson ice pack forced the launcher and derrick out of line. During this mishap the pipe was pulled out of location, putting a crimp in the pipe above water. Fearing underwater damage that would require replacement of pipe already laid, the owner's engineers, Ford, Bacon and Davis, Inc., New York, requested a visual inspection of the pipe interior. This inspection was performed by a small man, who crawled through the pipe and emerged with a favorable report. The crimped section was replaced and the job was ready for resumption in the spring.



WHOOSH! Buoyancy tank, released by surface-controlled device, comes up with a spectacular water-splashing rush.

Floating equipment consisted of the launcher barge, flanked by a 100-ton capacity derrick boat and a service barge with a crawler crane on deck.

Picking up the already-laid portion of pipe and setting its end in the chute alongside a welding station near the lower end, Merritt-Chapman & Scott then laid a 120-ft assembly of new pipe in the chute above the station. As welders made the joint, another group of men attached the Collins pontoon at water level. When all was ready, anchor lines were hauled, to back the launcher away and permit the pipe to settle into the water. When the new pipe's upper end came abreast of the welding platform motion ceased and a new cycle began. Pontoons, which left the pipe with a slight negative buoyancy, kept pipe from buckling by settling into trench at too sharp an angle. They were cut loose as soon as pipe was fully on the bottom—about 500 feet away from launcher. Three or four 120-ft assemblies were laid daily until the first string was across; then the rig went back and repeated the procedure for the second string.

As on the Narrows crossing, the Hallen Co., performed all pipe welding at Peekskill.

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SPECIFICATION	BAY CITY Model 45	Other ¾ Yd. Shovels
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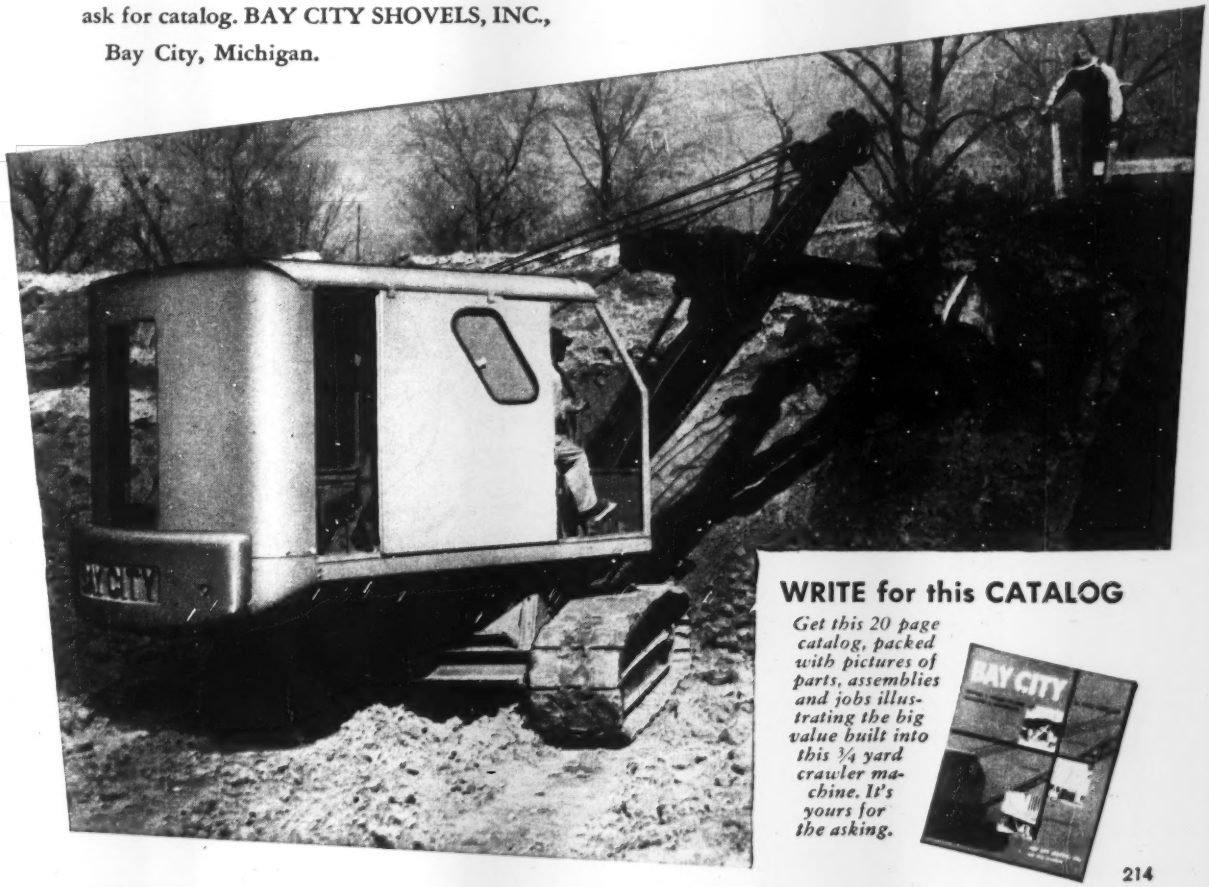
Power (std. gas)	81 HP @ 1200 RPM	
Engine Displacement	517 cu. in.	
Shovel Boom	19′ 0″	
Crowd	One Piece Chain	
Digging Radius 45°	28′ 1″	
Crane Boom (Std.)	35′ Pin-connected	
Crane Capacity, 10′ Rad.	28,500 lbs.	
Hoe Boom	20′ 0″	
Digging Depth	19′ 6″	
Bases	Cast Alloy Steel	
Crawler Bearing Area	24″ Shoes—5930	



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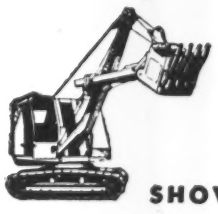

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July 28 Steel frame of 26-story office building is ready for first wall panel.

Aug. 5 Building is completely enclosed with aluminum panels after 66 hours.

Skyscraper enclosed fast with 2-story panels

New Yorkers could hardly believe their eyes. One day 99 Park Ave. was just a bare skeleton of steel and concrete projecting 26 stories above the sidewalks. The next day nearly 10 stories of the big office building were walled in.

The feat was accomplished with prefabricated aluminum panels two stories high, which were quickly positioned and bolted to the steel frame. Consisting of two windows and two spandrels, the panels weighed only 200 lb apiece. A total of 1,366 man-hours was expended in covering 98,363 sq ft of building with 130 tons of aluminum. Tower facing will be placed later.

Similar metal panels have been used before for tall office buildings—for the Alcoa Building in Pittsburgh, Pa., 6x12-ft units of ⅛-in. thick stamped aluminum (ENR April 3, 1952, p. 67); and for the 525 Wm. Penn Way Building, also in Pittsburgh, 4x12-ft units of 20-ga stainless steel (ENR Feb. 22, 1951, p. 40). But those panels were only one story high.

• **Convenient site**—Located close to subway, suburban and long-distance tram stations—Grand Central Terminal being but two blocks away—the new office building occupies a full block front in the heart of New York City's commercial district. It fronts 200 ft on Park Ave., 105 ft on E. 40th St and 155 ft on E. 39th St. Construction cost is estimated to be $14 million.

The building will provide 403,500 sq ft of rentable office space on 25 floors, and off-street parking on three levels in the basement. Because of the setbacks required by the city building code, space available on each floor varies in eight increments from 22,500 sq ft in the lower levels to 6,550 sq ft in the tower.

Vertical transportation will be provided by ten high-speed elevators with electronic signal control. All stories will be air conditioned.

• **Insulation a major factor**—Air conditioning had a significant influence on the design of the exterior wall, because it made insulation against heat gain a necessity. Between the metal panel and a 4-in. brick backup, which is required for fire resistance, will be an insulating air space at least 1½ in. wide. Rigid insulation 2 in. thick will be placed on the inner side of the backup. Under the windows, metal-enclosed air-conditioning units will be set against the insulation; above, the wall finish will be plaster.

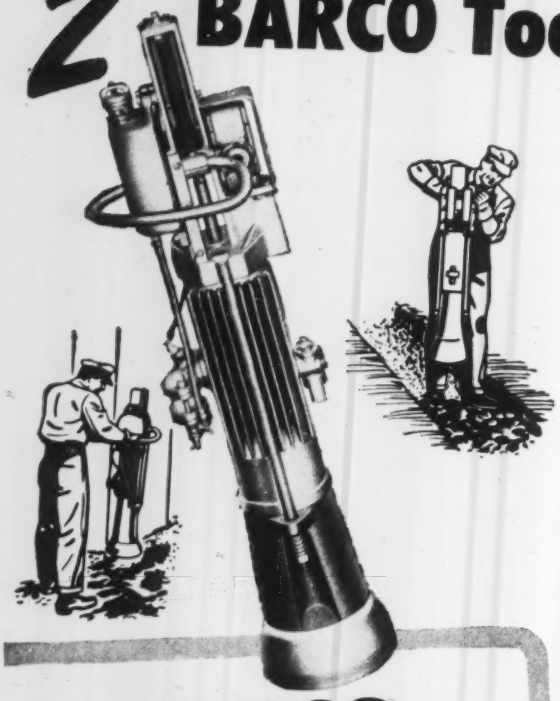
July 30 Facing for 12th and 13th stories rapidly bolted in place.

The 6-ft high windows will be fitted with heat-absorbing glass and stainless steel weatherstripping. Vertically pivoted, they will be opened only for cleaning (which, incidentally, can be done from inside the building). Window frames are made of aluminum extrusions.

• **No leakage**—Besides the advantage of being able to cover swiftly a large area with a single unit (4 ft 8 in. by 21 ft 3 in.), the panels are interlocked to eliminate need for calking. Weathertightness is achieved with baffle joints extruded integrally with panel flanges. Should water enter a ¼-in. gap at the face of the panels where mullions are connected, it is expected to be trapped in aluminum catch pans incorporated at the bottom of those joints. All joints were also designed to permit the facing to expand and contract.

The 21-ft height of the panels is claimed by the builders to offer the additional benefits of allowing extruded aluminum members to be used

2 BARCO Tools with Many Uses



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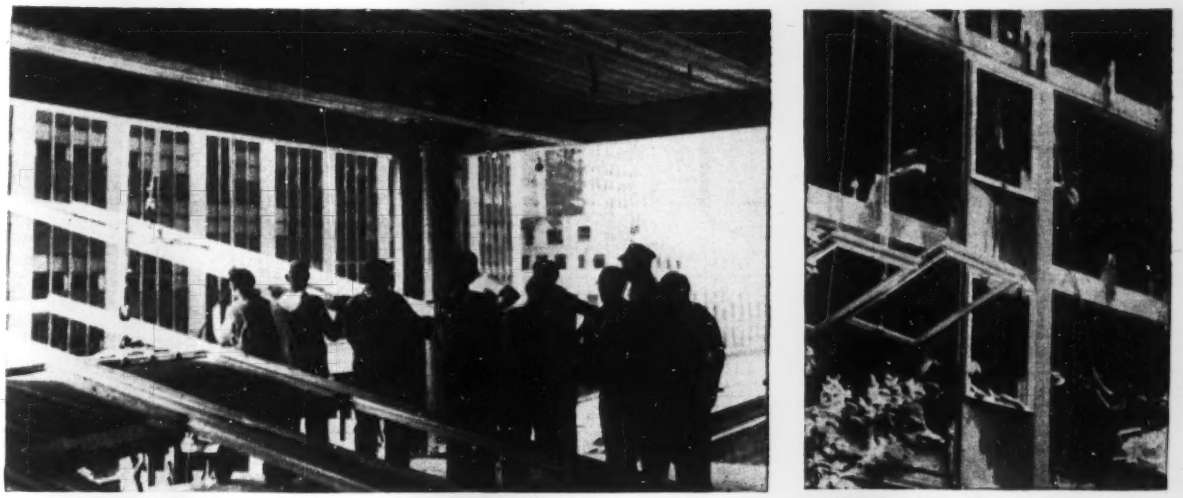


TWO-STORY PANELS, stored along the edge of the building, were erected with the aid of block and tackle.

in long lengths, giving added strength to the units, eliminating horizontal joints at alternate floors, and by forming long, uninterrupted vertical lines at mullions and column covers, giving the building a distinctive architectural treatment.

Spandrels are die-formed aluminum sheet, with a four-faceted depression. This gives the panels added flexibility to withstand temperature changes. The exterior is chemically treated to produce an integral gray color, softening the glare that would otherwise result from such a large metallic surface. Window frames and sash, however, are of polished aluminum, for contrast. The spandrels also received an anodic protective coating and two coats of lacquer. The rear surface was sprayed with a sound-deadening compound.

The metal in the panels is about 0.1-in. thick. Various aluminum alloys were employed for the different components—43S for mullions, 65ST-5 for window frames and No. 5 Alumilite sheet for spandrels.

• **Fast work**—Facing the entire building with 1,800 panels took only 66 hours. As they came off the manufacturer's production line, the two-story high units were stored on each floor, ready for installation. Three crews positioned them, with the aid of block and tackle, then bolted them to brackets previously welded to steel spandrel beams. No exterior scaffolding was needed.

Cost in place of the panels is estimated to be $7.25 per sq ft.

• **Controlled conditioning**—For air-conditioning purposes, the building will be divided into three zones. Above the first floor, each level will be served by a conventional duct system in the interior zone and by fan-coil units under the windows in the peripheral zone.

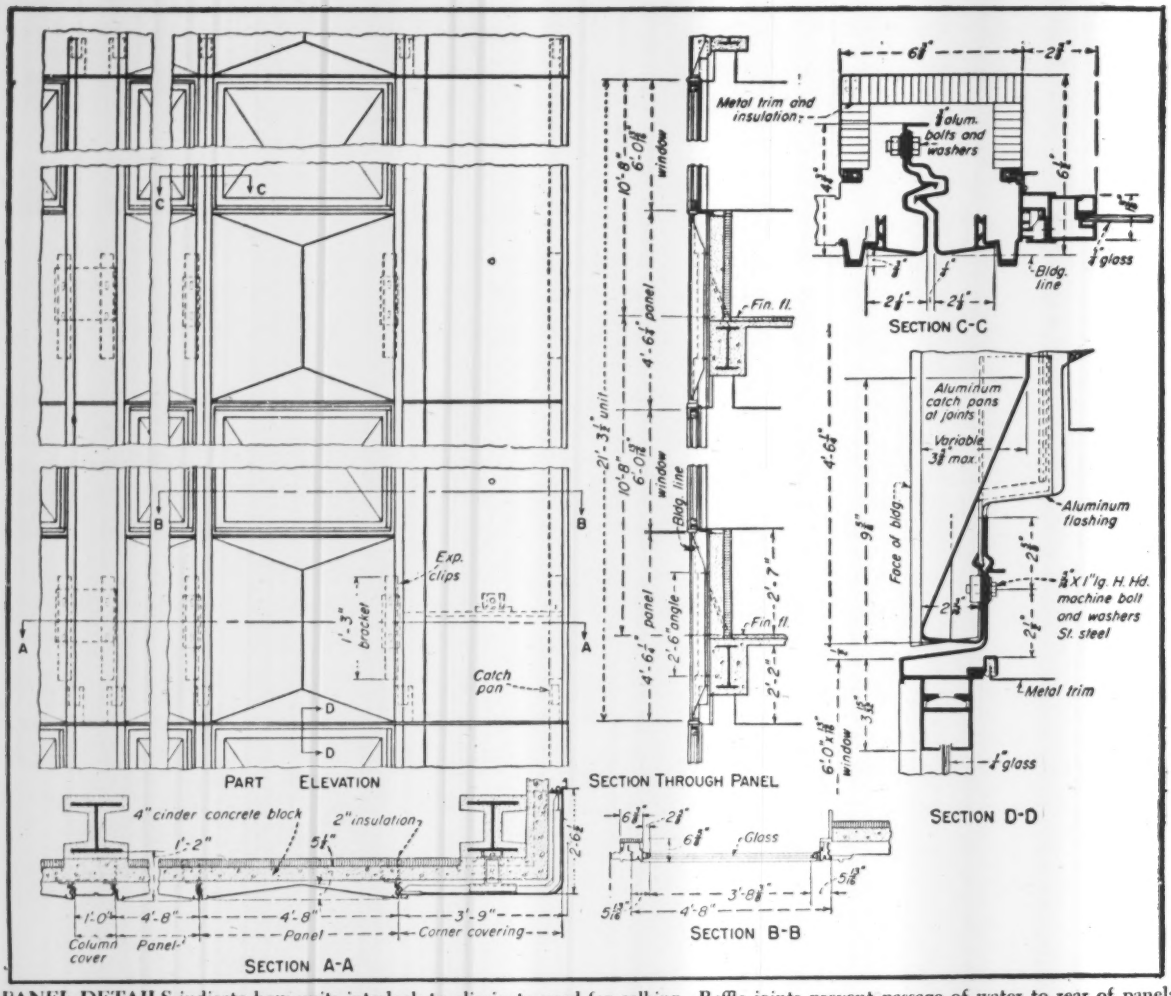
Providing for individual temperature control, each fan-coil unit will consist of a motor-driven fan, throw-away-type filter, silencer box, water cooling coil, drain pan and grilles.

Chilled-water supply to these units will pass through horizontal distribution mains at the first-floor ceiling and up risers between building—column flanges. Return risers will carry the flow upward, also along column flanges, to a main at the 26th-floor ceiling, which will return the water through an interior shaft to the subcellar refrigeration room.

For the interior zone, a conventional low-pressure system, package-type air-handling units will distribute the air. Each floor below the 23rd will have an individual machine room for the equipment. The upper four floors will be served by a machine room in the tower. Chilled water and control air and steam services will be supplied through a pipe shaft extending the height of the building.

The first floor and basement form the third air-conditioning zone, because of the difference in type of occupancy—presumably stores, banks or restaurants. Cooling load for this zone was taken into account in determining the capacity of the main refrigerating

BOLTS anchored the panels to brackets welded to the building frame.

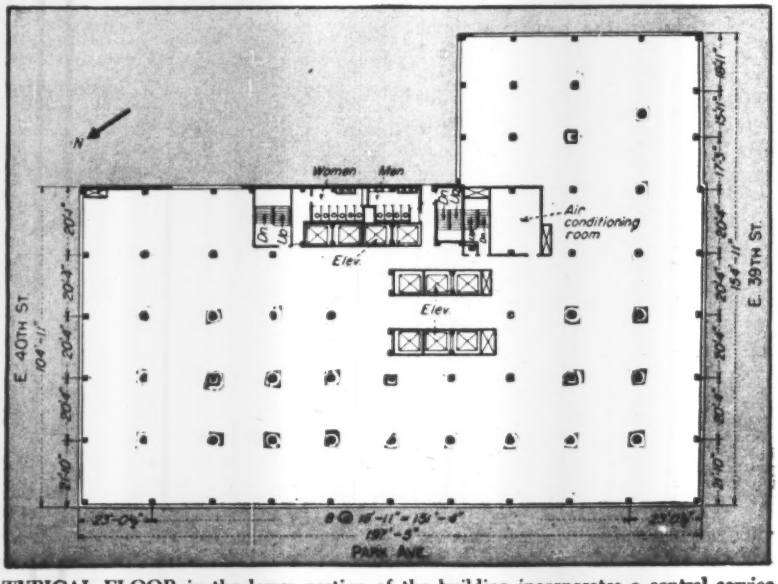


PANEL DETAILS indicate how units interlock to eliminate need for calking. Baffle joints prevent passage of water to rear of panel; catch pans trap water at face of mullion joints.

machines, and in addition, space was allocated in the sub-basement machine room for a 150-ton reciprocating-type refrigeration machine for night and week-end operation. A cross connection will permit cooling this third zone during normal building operation with the central machinery—an installation including two centrifugal compressors rated at 665 tons apiece.

Two package-type, three-pass fire-tube boilers rated at 15,520 lb of steam per hour at 125 psig will be installed. They will supply steam at high or low pressure, as needed, for heating in winter and for turbine drive for refrigeration machinery in summer.

Emery Roth & Sons is the architect; Victor Mayper and Associates, the structural engineer; and W. R. Cosentini and Associates, the mechanical engineer. Tishman Realty & Construction Co., Inc., is the general contractor and owner. General Bronze Corp. of Garden City, N. Y., designed, fabricated and installed the aluminum panels.



TYPICAL FLOOR in the lower portion of the building incorporates a central service core, including an air-conditioning room serving the interior.

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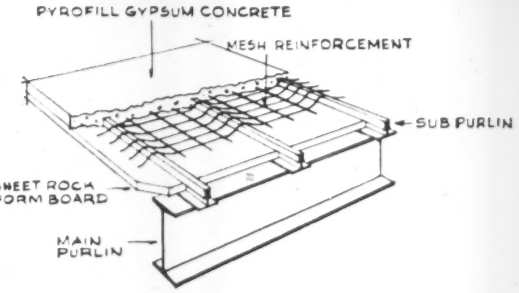

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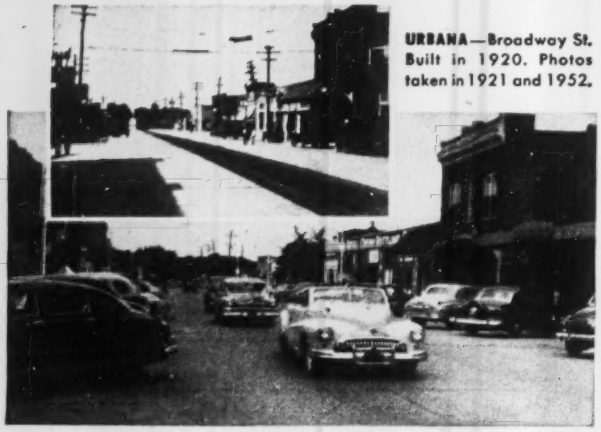
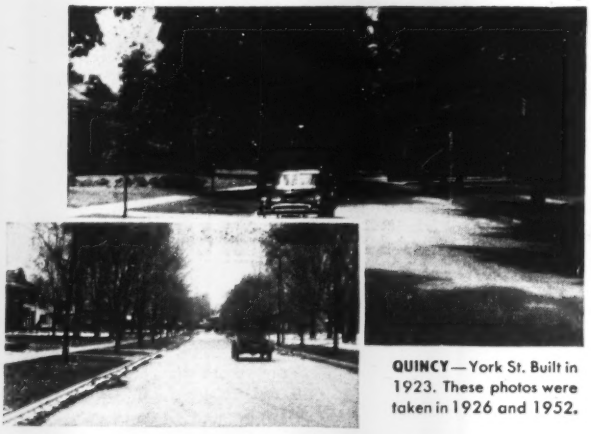


URBANA—Broadway St. Built in 1920. Photos taken in 1921 and 1952.



QUINCY—York St. Built in 1923. These photos were taken in 1926 and 1952.

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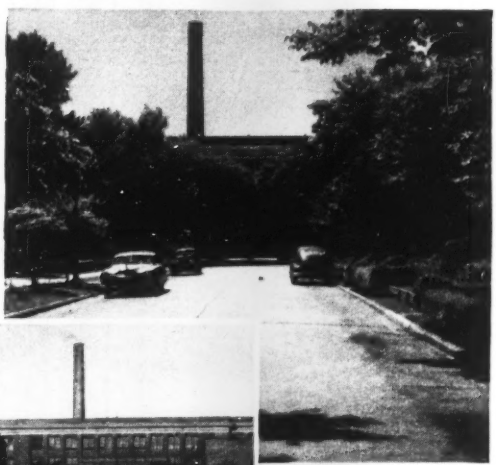
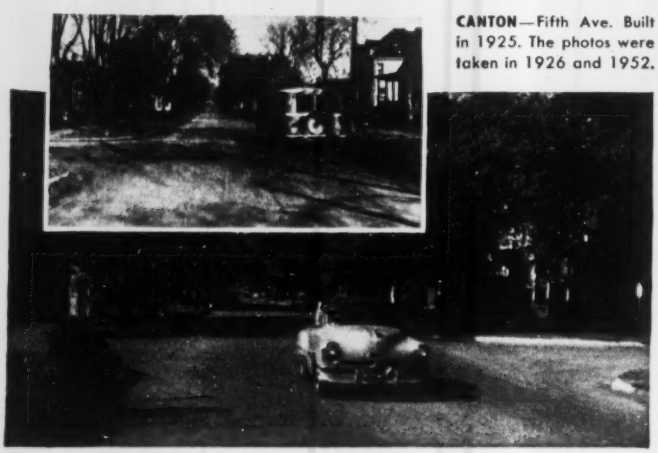
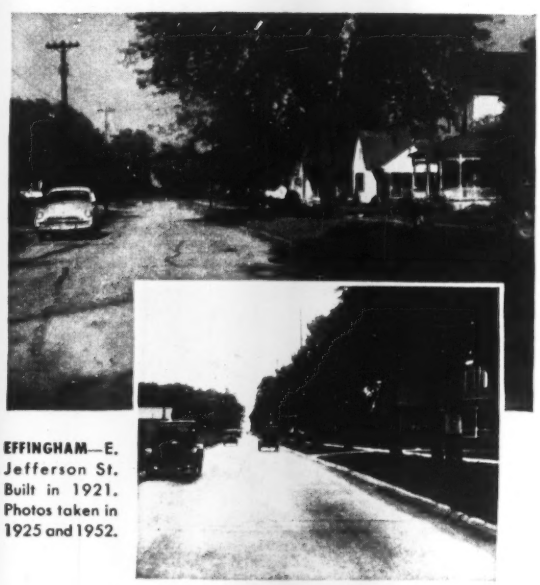


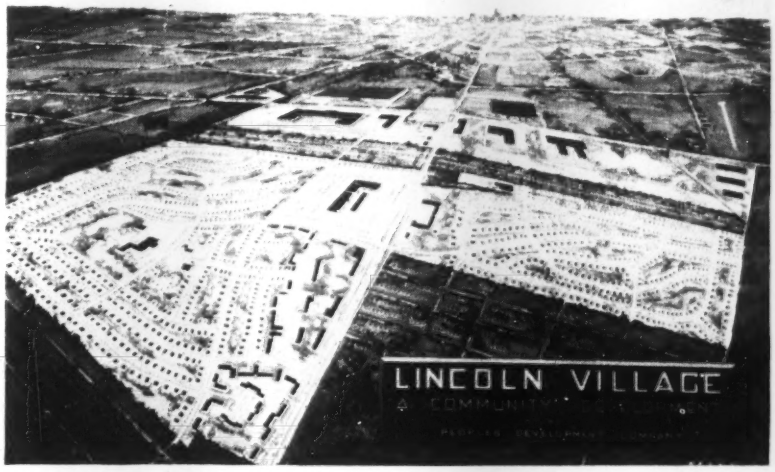
CHICAGO—Windsor Ave. in the 3700 block north. Built in 1925. These photos were taken in 1925 and in 1952.



CANTON—Fifth Ave. Built in 1925. The photos were taken in 1926 and 1952.



EFFINGHAM—E. Jefferson St. Built in 1921. Photos taken in 1925 and 1952.



TAILOR-MADE CITY features a 50-foot buffer strip separating industrial and residential areas. Plan was developed around schools and shopping-center.

Columbus stresses planning to insure capital's future

With over $100 million worth of public and private construction planned or under way, Columbus, Ohio, is working to assure itself that all the new programs are fitted into careful long-range planning. Under construction are a water supply project which will serve the city's needs for an estimated 30 years and a complete town for 10,000 residents on the municipality's outskirts.

Firmly planned are a $48-million sewerage project and a $4.5-million highway interchange.

The planned community, privately financed Lincoln Village, is being developed by the Peoples Development Co. through close collaboration among the city and county planning commissions, the Federal Housing Administration and Seward Mott, a private consultant from Washington, D. C.

• **Planners' field day**—City planners traditionally have sought a tract of ground in suitable surroundings and the chance to plan against blight, traffic paralysis, zonal sickness and utility headaches before they happen.

Lincoln Village seems the answer to those specifications, and planners are making a field day of it. The town, named after Murray D. Lincoln, president of the Farm Bureau Insurance Companies, who evolved the idea for developing a model city, will be financed by the insurance firms at an estimated cost of $30 million.

The new town is laid out on an 1,170-acre tract that took three years of searching to find. The site is being prepared by a fleet of graders for construction of the first of two stages. This phase, scheduled for completion in three years, calls for 900 single-family homes, on 257 acres, and development of another 133 acres with apartments for 750 families.

• **Self-sufficient segment**—Community facilities planned in this segment are a school, three churches, playgrounds, a fire station, a library and a shopping center with 60 stores and parking space for at least 4,000 automobiles.

The second stage, scheduled for a start in 1957, will be devoted entirely to single-family dwellings, a school and three more churches on a 230-acre tract. The complete project is slated for completion in 1959.

The nucleus of each stage will be the school tract—20 acres of playground and wooded parks. Through traffic will be routed away from the residential sections with comparatively few traffic intersections and no "blind corners." Interior walks will lead to schools and shopping areas.

• **A place to work**—Light and heavy industry will be limited to a 550-acre

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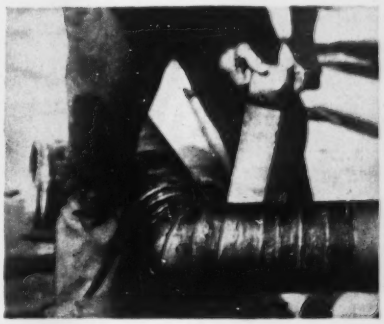

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TAPECOAT serves as both bond and protection...requires no foreign adhesive.

TAPECOAT resists moisture, acids, alkalis, soil stress, electrolysis, chemical fumes, fly ash, salt water, salt-laden air, barnacles and other severe corrosive and abrasive conditions.

TAPECOAT is clean to handle and easy to apply by spiral or "cigarette" wrapping with the use of a torch to bleed the coating for a bond to the surface. It cuts maintenance and replacement costs.

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TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths to meet varying requirements.

TAPECOAT has proved its dependability for gas and oil companies, railroads, telephone companies, air lines, ship builders and operators, water and sewage works, chemical and industrial plants, engineers and contractors... in combating corrosion both underground and above ground.

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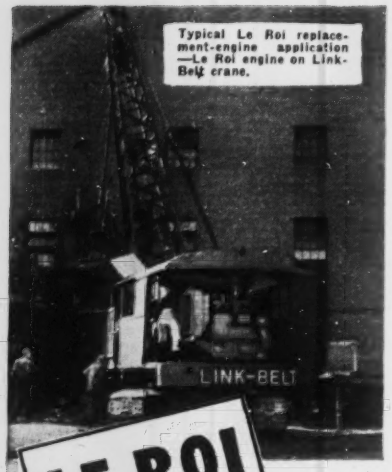

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area skirting the main line of the Pennsylvania Railroad on the northern boundary of the site. The industrial zone will provide plots for eleven big plants in addition to the large Westinghouse and General Motors installations already in the area.

• **A place to live**—A 50-ft-wide buffer strip of trees and shrubs will separate the industrial zone and railroad from the town, but all residents will be within walking distance of their places of employment.

Grid patterns of street layout have been abandoned for the more unconventional curving streets. Lot frontages will vary from 65 to 90 ft, and the corner plots will be larger than the interior lots to allow for deep setbacks and longer sight lines at the intersections.

• **And accessible shopping**—Residential streets will have curb to curb widths of 36 ft, and a main thoroughfare leading to the shopping center will be 62 ft wide.

Developers have released no information on housing styles, but prices probably will range from $9,500 to $20,000 with no attempt being made to segregate the various homes according to price. Neither architecture nor price tag will limit the construction of a home to a particular area.

Working schedules call for the sewer and water lines to be placed and the streets paved by the early fall, and construction will be aimed for spring occupancy by "first families" of the village.

• **Activities grow**—While Columbus city officials and planning agencies watch over the growth of Lincoln Village, they are also concerned with other activities.

• **No empty tumblers**—Residents of North Side Columbus have experienced an annual drought due to lack of pumping facilities. Faced with a growing water crisis, city officials had two courses of action open to them:

Tapping the underground Newark River for a possible 30 mgd was one. The problem of pumping the water, and the necessity of revamping the entire water system forced abandonment of this scheme.

The more practicable alternative plan of damming the Big Walnut River at a point eight miles northeast of the city was accepted after it was found that the project would supply Columbus with ample water until 1985 at an initial cost of $18.5 million.

The Hoover Dam project (so named for brothers Clarence B. and Charles P. Hoover, both active Columbus water superintendents), scheduled for completion in 1955, not only will solve the storage problem, but by reversing the flow in three of the city's four water districts the pumping difficulty will be overcome and water will flow by gravity through the entire system.

The contract for construction of a $3.5-million filtration plant will be let late this year, and $2 million will be spent on supply mains that will bring the water to the city mains from the plant.

• **Building for fun**—The dam will be 2,610 ft long with a concrete spillway section 680 ft long and the balance of the structure in compacted earth fill. The resulting reservoir will be eight miles long and a mile wide at a point six miles north of the dam. The area is counted upon to provide excellent recreation facilities.

During development of the project six bridges will be removed, one will be raised and three new bridges will be built.

With the existing Griggs and O'Shaughnessy dams, the new reservoir will supply Columbus with 85 mgd and a possible peak quantity of 110 mgd.

• **More problems**—With water-supply problems well on the road to being solved, officials settled themselves to crack still another tough nut:

The Ohio Water Pollution Board has come down hard on all offenders in its drive to clean up the streams of the state. That includes the capital city.

• **Survey forced**—Under pressure of the board, Columbus engineering firms of Jennings-Lawrence Co. and Burgess and Niple were called in to conduct a sewage survey, in conjunction with city and county planners and engineers.

The recommendations to the Regional Planning Commission, carried in a progress report by Carl C. Walder and Raymond Fuller, representatives of the engineering companies, proposed seven trunk lines, two new sewage treatment plants and the expansion of the existing plant.

• **Action urgent**—Columbus' present activated sludge treatment plant is now handling 70 mgd, far exceeding its designed 50 mgd capacity, so a $4-million expansion of this plant was recommended as the most critical

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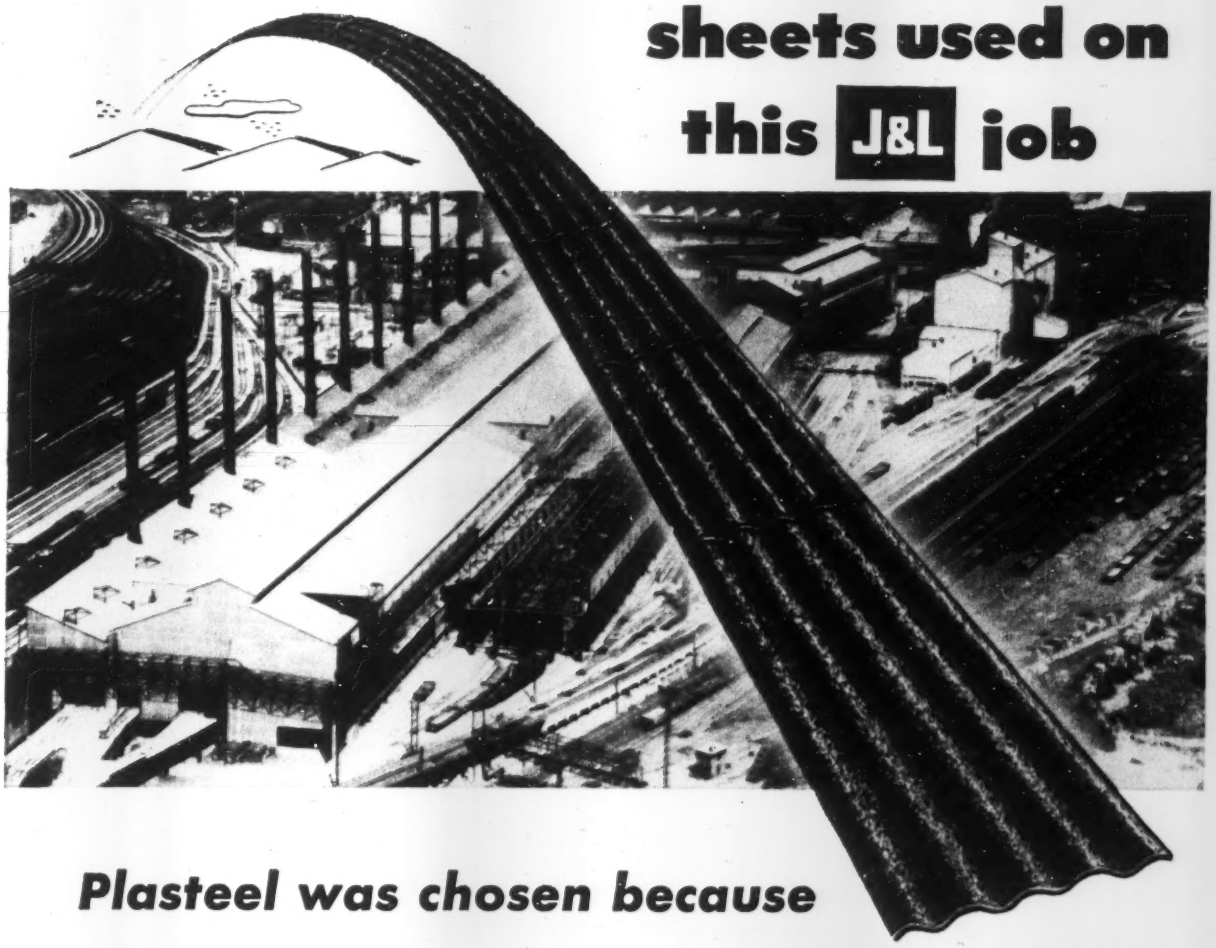

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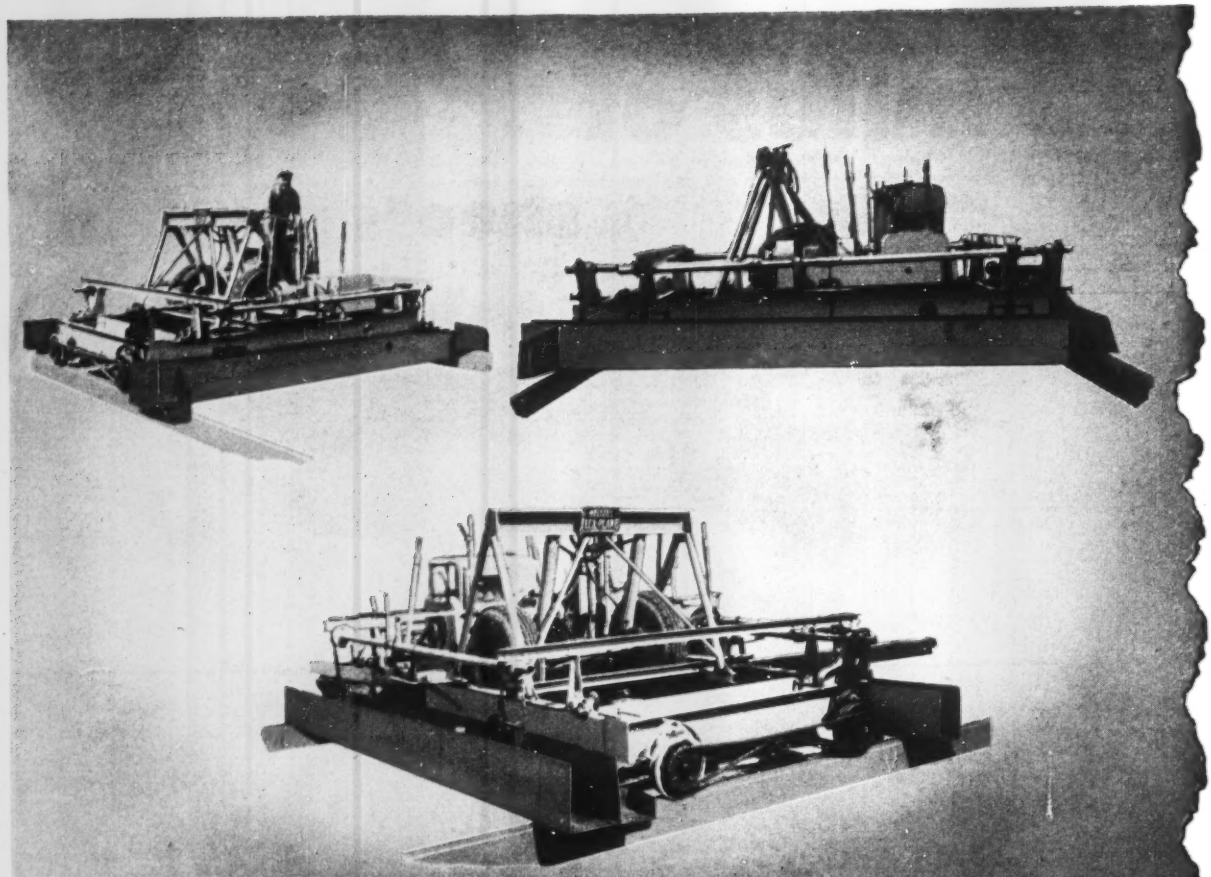

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Wherever one of these machines is in operation you'll discover the contractor using the machine has been able to work faster at less cost.

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Special screeds and screed mounts enable this speedy machine to finish any type surface in the manner specifications call for. Both screeds are mounted outside the frame which permits faster screed changes. Machine is telescopic . . . can be altered to fit any size job in approximately 15 minutes. If you are in the business of building concrete streets, highways or landing strips, you can't afford to overlook this cost-cutting finisher. To get all the facts drop a note on your company letterhead to the Flexible Road Joint Machine Company, Warren, Ohio, today.

* *Ask for name of contractor nearest you operating a Detroit Special — talk to him about the quality of work, the speed and the savings he has been able to get by using this great machine.*

Cable Address: Flex-Plane

stage of the project, and was slated for construction in 1953.

• **Reaction slow**—The starting date for the first stage of the 25-year program had to be postponed until next year when general revenue bonds will become salable. In the meantime the city is urging state extension of its temporary permit to dump sewage into the Scioto River, and the city attorney's office has been instructed to settle 100 pending pollution suits —out of court if possible.

According to the planners the entire project upon completion will serve adequately the estimated 815,000 population of Columbus in 1980.

• **First link for expressway**—While sewerage plans continue to progress, Director Grover Clements of the Regional Planning Commission announced that contracts for the construction of the first stage of the important link between the $39-million interbelt system to the outerbelt system of highways have been scheduled for letting on Sept. 22.

The construction will progress in phases interrupting traffic movement as little as possible, and the first will be a major clover-leaf interchange that has been a source of controversy during the planning sessions.

Estimates of a 6,000-vehicle per day increase in traffic volume caused by the construction of a huge retail and wholesale Sears Roebuck & Co. store resulted in a dispute that required mediation by an outside engineering firm and close cooperation between a special Sears engineer and highway engineers to bring planners into complete agreement.

Fight ends in Youngstown—$10-million plant considered

The Youngstown, Ohio, city council, after years of bickering has voted to authorize the hiring of engineers to plan for a $10-million sewage disposal plant (ENR July 23, p. 46).

The vote came up just before a hearing was set by the Ohio board. The city, the largest in Ohio without a treatment plant, requested an extension of its permit to dump raw sewage into the Mahoning River.

City Law Director H. Herschel Hunt ruled that the plan of County Engineer Samuel Gould, Jr. to create a regional planning commission to do the engineering studies was illegal. When this plan failed, the council took the vote. They also authorized issuance of notes to finance the plans, expected to run over $300,000.

Architect: Wyatt C. Hedrick, Dallas, Texas

Four Longview school buildings used approximately 400,000 fbm of Minalith-treated lumber for roof decks, ceiling joists, wood framing around openings.

How Longview, Texas, PROTECTS Its School Children and Its Tax Dollar Investment

When the citizens of Longview, Texas decided their community needed four new school buildings, they demanded absolute structural safety plus practical economy of design and construction. They also wanted long serviceability with minimum maintenance.

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With Minalith-treated lumber readily available, local labor was able to proceed at once. Longview was pleased to note that use of local labor and local materials kept construction tax dollars at home.

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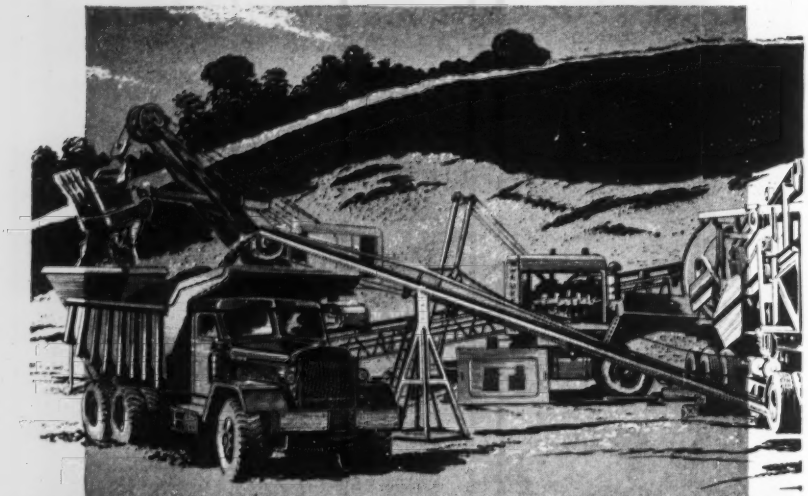

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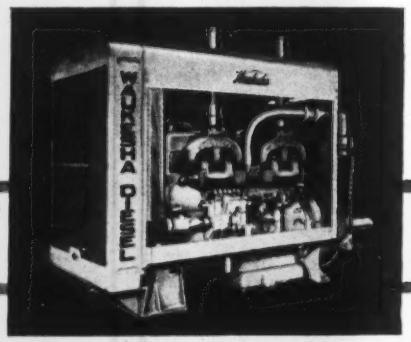

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MUNICIPAL

Newly rewritten fire code offered by underwriters

The National Board of Fire Underwriters has announced publication of its newly revised model Fire Prevention Code.

The first code was published in 1930, providing for safeguards against fire and explosion hazards from storage, handling and use of flammable materials and against hazardous occupancy or use of buildings and premises.

• **Latest data**—Everett W. Fowler, director of NBFU's division of codes and standards, explains that in this latest edition, the original code, "Suggested Fire Prevention Ordinance," has been completely rewritten in order to bring it up to date and make it consistent with nationally recognized safety standards.

There also is included in the new book a suggested ordinance providing for establishment of a bureau of fire prevention for the adoption of the code by reference.

• **To earliest applicants**—Free copies are available upon request, by professionally interested persons, to the board at the following offices in the various sections of the country:

West of the Rockies: 465 California St., San Francisco, 4. Midwest: 222 West Adams St., Chicago 6. East: 85 John St., New York, 38.

Toronto's "Insurance Row" greets $8-million neighbor

Development of "Insurance Row" in Toronto was thrust ahead recently with the announcement of a construction start on an $8-million, 10-story office building for the Confederation Life Association.

The new building—steel frame construction with brick and stone walls—will contain 200,000 ft of floor space. The foundation will be reinforced concrete.

• **Birds of a feather**—The bustling area has seen the recent completion of a $5-million, 12-story addition to the Manufacturers Life Insurance Co., and under construction are multistory buildings for the Independent Order of Foresters and the Crown Life Insurance Co.

All four of the new projects were designed by Marani & Morris, Toronto Architects.

Several other insurance companies are building or planning structures and annexes in the city.

PRODUCTION REPORT

from: Production Chief

to: all Departments

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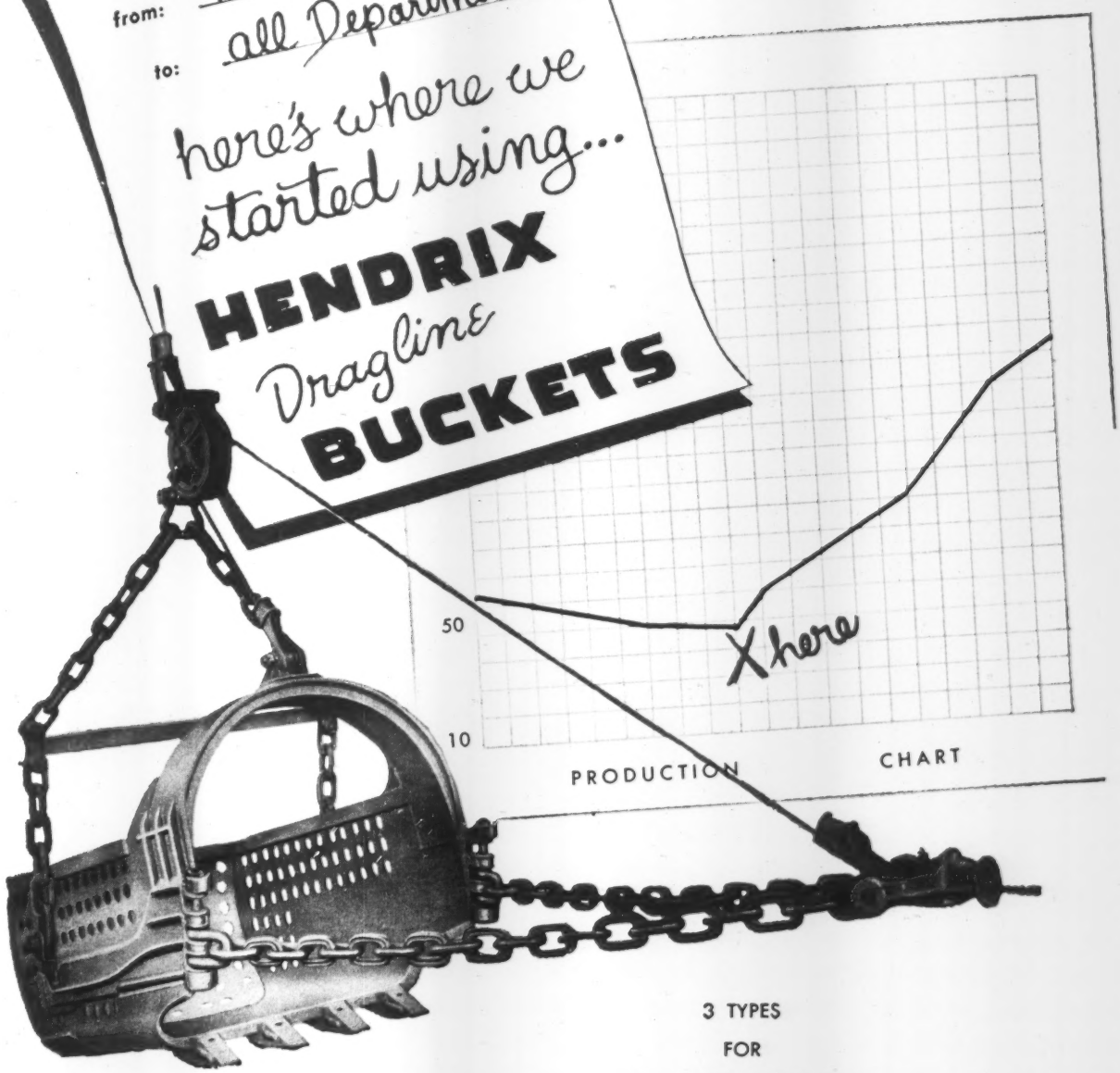

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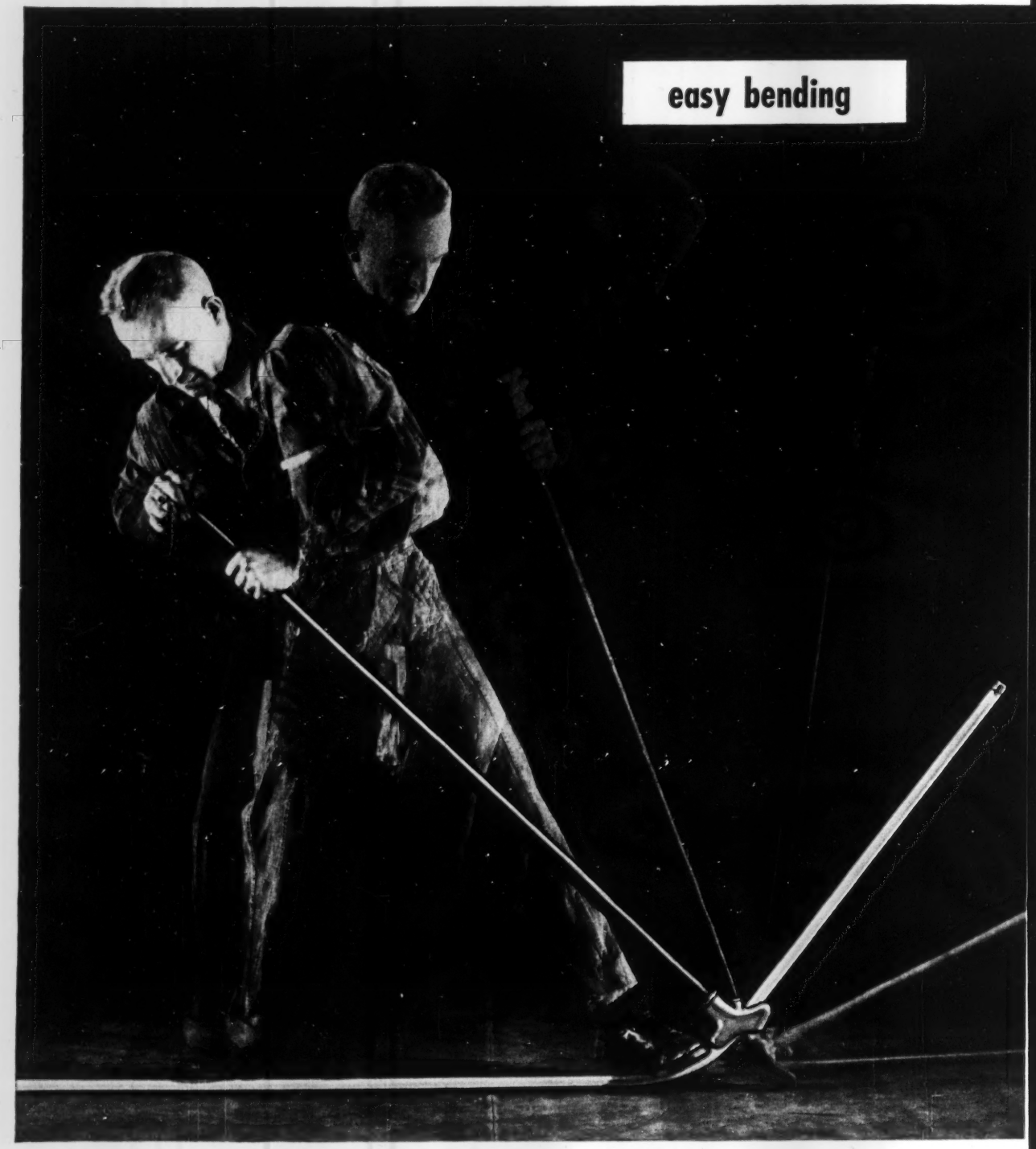
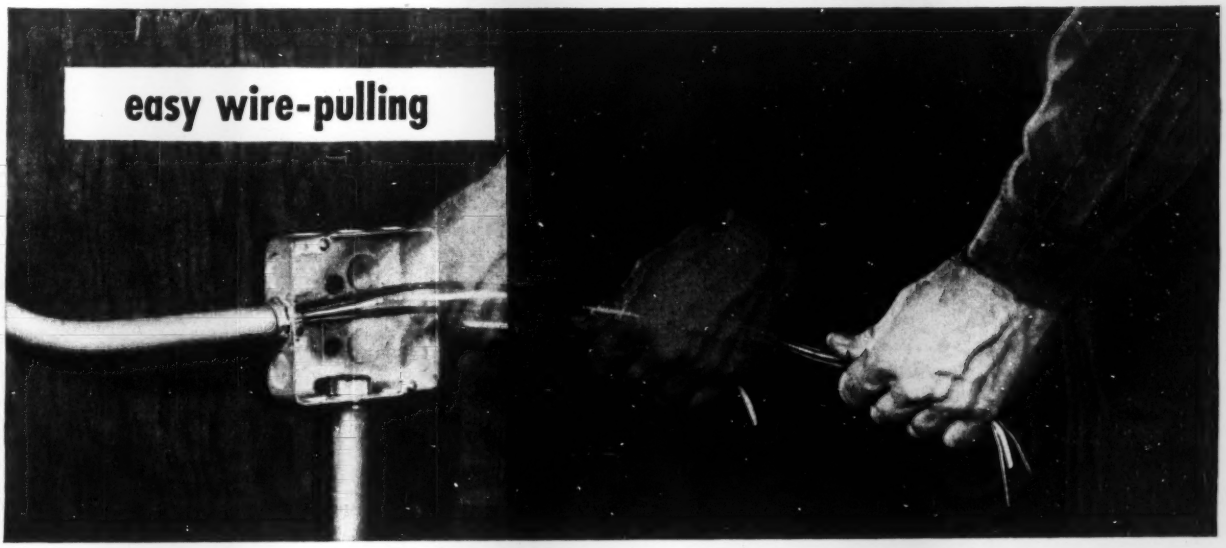


New G-E WHITE is easier to bend because the "metallizing" process eliminates the quenching and straightening that cause hardening.

new rigid conduit



Wire-pulling is easier because new G-E WHITE is lined with a new corrosion-resistant coating, containing an anti-friction agent. There is no roughness inside the conduit that might damage insulation.

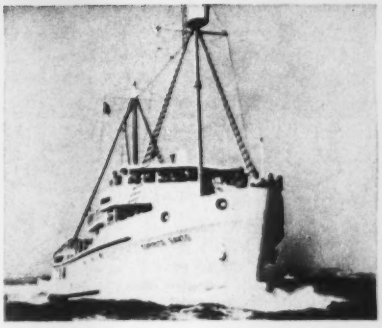
A new G-E WHITE rigid steel conduit that has easy bending, easy wire-pulling, and improved corrosion-resistance characteristics has been introduced by General Electric's Construction Materials Division.

The result of an intensive research and development program, new G-E WHITE is now zinc-coated by means of a process called "metallizing." This process, while never before applied to rigid conduit, has been proved by more than 30 years of use on ships, pipelines, bridges, and trestles in damp and corrosive atmospheres.

In metallizing, pure zinc powder, reduced to a plastic state, is sprayed onto the conduit. This bonds a controlled, uniform coating of pure zinc to both pipe and threads to provide lasting protection against corrosion. Metallizing does not harden the conduit or form brittle zinc-iron alloy.

In addition to the metallizing process, a new anti-friction inside coating has been added to make wire-pulling easy . . . to provide permanent interior protection against corrosion.

The new G-E WHITE rigid conduit conforms with the American Standards Association specifications, is listed by Underwriters' Laboratories, Inc., and meets all U. S. Government specifications. Ask your distributor about the new G-E WHITE. Available in all size mixes. Section C24-832, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.



Photograph courtesy of Metallizing Engineering Co., Inc.

Better Corrosion Protection — The corrosion resistance of metallizing has been proved by 30 years of service, and by exhaustive tests in G-E laboratories. The hull and superstructure of the ship above depend on metallizing for protection against salt spray. The new G-E WHITE conduit has the added protection of a coating of C-553 lacquer over the metallized zinc.

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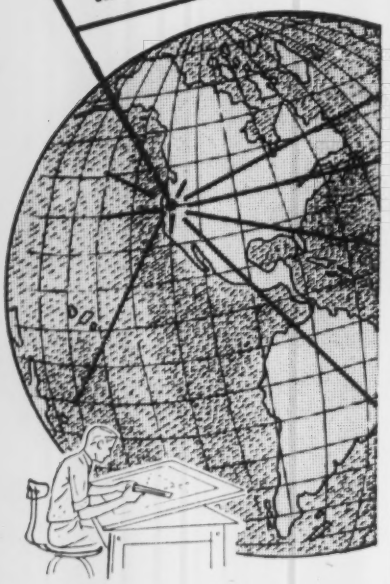

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ARDENNES BRIDGE at Namur, Belgium, is an all-steel, plate box girder span. Distance between bank supports is 452 ft 8 in.

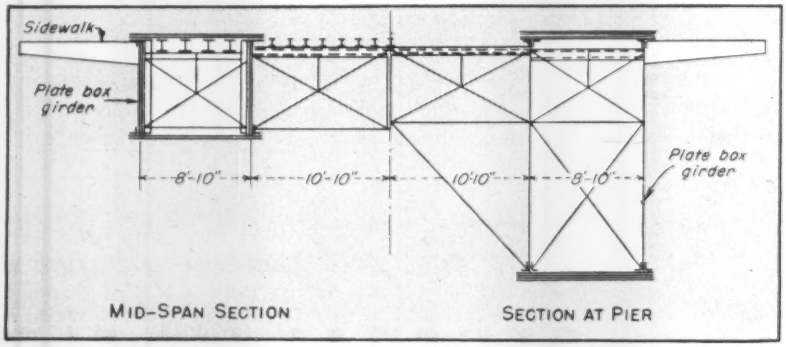
New steel bridge is first to span Meuse River without river piers

G. N. Balbachevsky
Editor, L'Ossature Metallique
Brussels, Belgium

Recently completed at Namur, Belgium, the haunched, steel plate box girder Ardennes Bridge is the first to be put across the River Meuse without river piers. Consisting of three continuous girder spans over four supports, the 620-ft long bridge has a road deck 39 ft 4 in. wide and cantilevered sidewalks on each side 9 ft 9 in. in width.

The central (river) span of the bridge is 452 ft 8 in. long, and the approach spans, running from the river bank supports back to anchor piers, are each 83 ft 8 in. long. The plate box girders at mid-span, over the river, are 7 ft 6 in. deep, and at the bank supports the haunches of the box girders are 19 ft 7 in. deep.

• **Upthrust on anchor piers**—The central span was erected on the cantilever principle from both sides of the river, yet, despite its flattened arch shape, there is no horizontal reaction from the central span on the bank supports. But since the central span is relatively so much longer and heavier than the approach spans, there is a maximum upward thrust of 5,000 tons on the anchor piers at the ends of the approach spans under critical live loading.



TWO PLATE BOX GIRDERS, braced with angle struts form the Ardennes Bridge. At mid-span, I-beams reinforce the road deck and top flange of box girders.

To counteract this upward thrust on the anchor piers, these piers were made extremely heavy. When the river is at flood stage and the submerged piers are reduced in weight by 0.75 tons per cu yd, the weight of the anchor pier has to be such that it is still greater than the upward thrust of the bridge under the most critical live loading.

The long, flat arched central span, was erected on a cantilever principle so that even during construction there would be no need for any falsework or barges in the river that might consequently hinder navigation. The design and the erection method furthermore allowed the maximum free clearance under the center of the bridge.

• **Construction tilt**—During erection from each side of the river, two sections of the bridge were given a slight upward tilt (that would have amounted to about 2 ft at mid-span) to counterbalance the deflection—provoked by dead load during erection—of their ends that finally were joined over the river. At the closing of the main girder, the end of the approach span at the anchor pier had been allowed to rise sufficiently to bring the ends of the two reaching arms of the main girder down to the proper level for placing the joining section of box girders at mid-span.

One river bank support of the Ardennes Bridge is a fixed hinge, while the other is a roller bearing. Both anchor supports at the end of the approach spans are of the roller bearing type, but are held down to counteract the upthrust induced by the main span.

The bridge was built by the Ateliers de Construction of Jambes-Namur, Belgium.

British collaboration on St. Lawrence Seaway

To meet United States competition in the St. Lawrence Seaway project, British contractors will form a non-operating group of nine firms to bid on the large-scale Canadian works. Whether the companies act individually or together will depend on the size of the contracts. Construction concerns known to be interested are: Richard Costain, Taylor Woodrow, Sir Lindsay Parkinson and Co., Dorman Long and Co., John Laing and Son, John Howard and Co., Matthew Hall and Co., Peter Lind and Co. and Caffin and Co.

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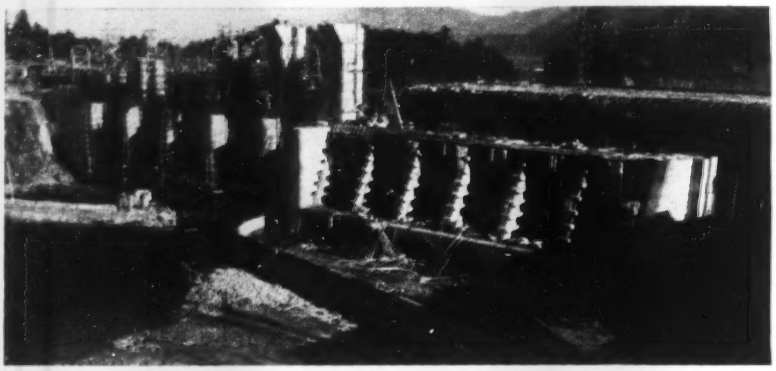
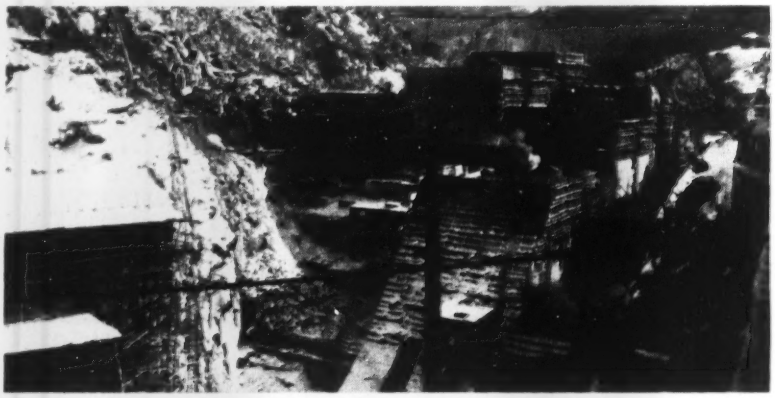


YANAIZU DAM, on the Tadami River in Fukushima prefecture, about 140 miles north of Tokyo, is one of 88 hydroelectric projects currently under construction.

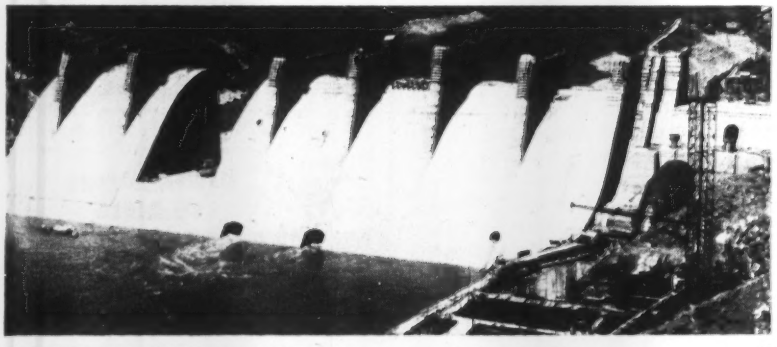


ASAHI DAM, under construction in Gifu prefecture about 180 miles west of Tokyo, will rise 280 ft among hills typical of Japan's interior.

Hydro electric power projects boom in Japan's post-war economy plans

There are 88 hydroelectric projects now under construction in Japan, a country smaller than California. But water power is Japan's greatest natural resource: the hydro potential per sq mile of Japan is five times as great as that of the U. S. Japan has a potential of 20,000,000 kw as opposed to the U. S.'s potential of 104,000,000 kw (FPC report of 1950).

In the next five years Japan expects to increase hydro output from 6,800,-



ASAHIGAWA DAM, about 340 miles west of Tokyo in Okayama prefecture, will help to raise Japan's hydro power output under the new five-year plan.

000 kw to a new capacity of 10,170,000 kw.

Of the 88 hydro projects under construction, 48 are being carried out by nine power companies established in 1951 when the American occupation broke the wartime monopoly of the Japan Electric Power Generation and Transmission Co., or Nippon Hassoden.

The semi-governmental Electric Power Development Co., established under the Power Development Promotion law of 1952, is constructing 14 of the hydro projects. Ten prefectural governments are building 13 hydro plants, and 13 more are owned and being built by 11 private industrial firms. Many more projects are being given consideration at the present time.

Old dam to be prestressed to build it higher

An existing dam is being prestressed at Cape Town, South Africa, to make possible raising the height of the structure without increasing its thickness. The operation will increase the capacity of Steenbras Reservoir—part of the city's water supply system.

The prestressing process used for the construction is comparatively simple. Holes are drilled vertically down through the dam and into about 30 ft of bed rock. Into these holes are inserted long cables, whose bottom ends are splayed out to anchor in grout in the bed rock. At the top of the dam, the other end of the cable is formed into a loop. When the anchorage in the bed rock is solid, jacks tension the cable by pushing between the dam itself and a concrete block placed in the loop of the cable. When the design strain has been put into all the cables in the dam, bond between the dam and the cable is established by filling up the hole with grout.

Construction on top of the strengthened dam to increase its height may then proceed.

Record tunnel

In September, the Japanese National Railways plan to start preliminary surveys for building what is expected to be the longest undersea railway tunnel in the world—24 miles long, 12½ miles of it under water. At its deepest the tunnel will run about 530 ft below the sea surface; at its shallowest, 400 ft. It will be constructed from Miumaya on the Tsugaru Railway line in Aomori Prefecture to Oshima Fukushima on the Fukuyama Railway line in Hokkaido.

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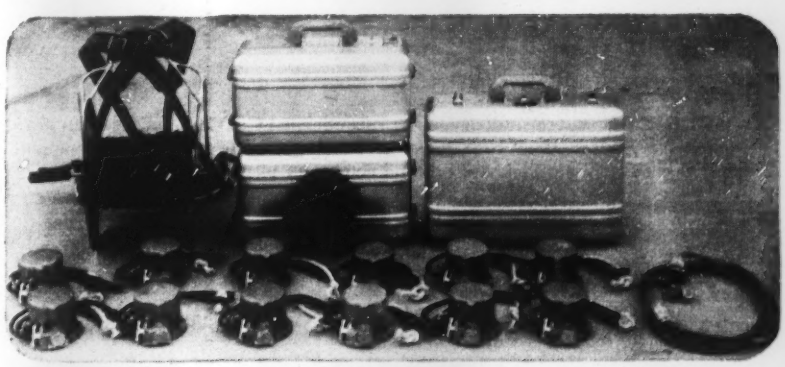

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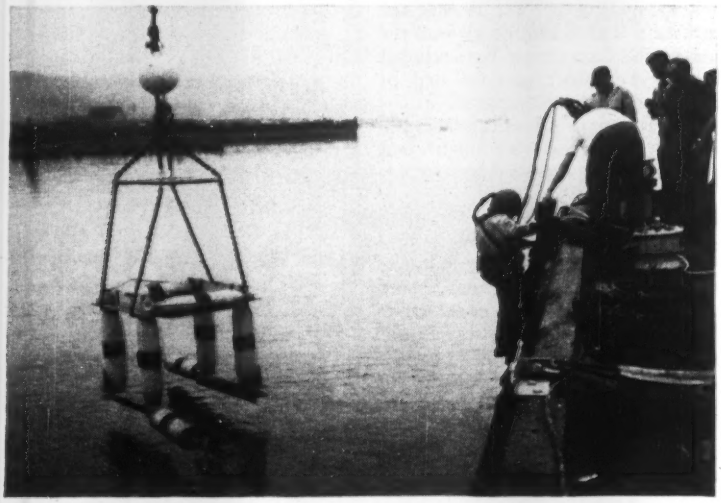
SAMMY COLLINS starts a work day for Transcontinental Gas Corp. on the main pipeline across the Hudson from New Jersey to Manhattan. He's worked out ways of handling pipe under water that save pipeline companies plenty of money.

PLAN OF THE DAY—Collins checks it with assistant Jean Johnson. The job: to lower pipe already on bottom.

TROUBLE—Then on the tug, he wrestles with fathometer used to measure small variations in the river bottom.

REPORT—He gets the word from diver Finn Nord. Collins is also a diver.



OVER THE SIDE goes a heavy weight to help keep the pipe firmly settled. Diver follows to position the weight on the pipe, resting in its trench.

COFFEE BREAK—On the barge which holds equipment, Sammy takes time out while Johnson shouts orders.

TRANSFER—He climbs from the tug back aboard barge to superintend next step on the job.

NEW POSITION — He points out to Johnson that the barge should be moved a few feet.

Sammy Collins on the job

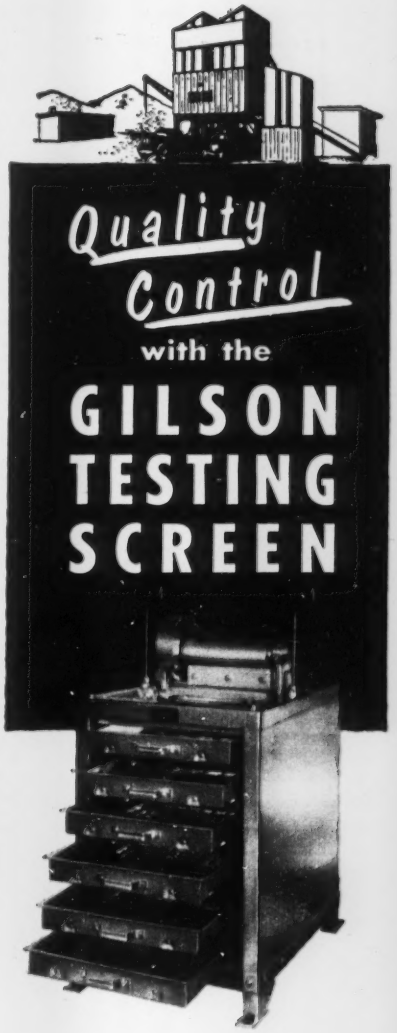
Sammy Collins (cover) is a man who has worked out new ways of handling pipe under water that beat anything ever done in this field before. On page 37 of this issue, ENR explains the techniques Collins used to help Transcontinental Gas Pipe Line Corp. with three trans-Hudson crossings. Herewith are pictures of the dynamic Mr. Collins in action. He has now gone on to lay pipe across the Straits of Mackinac and soon will do a job for the Indian government.

Collins learned about pipe on land, in the Texas oil fields. When offshore drilling started in the Gulf of Mexico, he turned to laying pipe under water. Collins and his associates have worked out a method of launching pipe from shore launchways, instead of from barges, keeping the pipe buoyant by use of pontoons.

In 1948, a special hurry-up job for Aluminum Co. of America made the Collins group famous. It laid some 45 miles of gas line under water in Matagorda Bay, Texas, in less than 24 days. That saved Alcoa's lease of the gas reserved in the bay, which was to provide fuel for a huge plant Alcoa was then building nearby at Port Lavaca.

Collins soon found that previously laid lines were being destroyed because barnacles had eaten the protective covering, allowing the pipe to rust. So he invented his jet trencher (page 37) as a means of getting the pipe under the bottom mud, where barnacles couldn't reach it.

Collins worked out his first trencher after 30 days of underwater tinkering in Corpus Christi Bay, after which he successfully trenched 11,000 ft.



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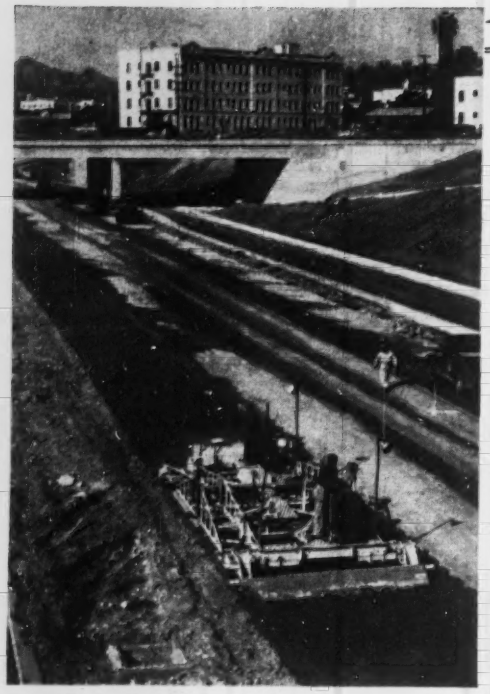

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Shown at the left is a portion of the Hollywood Freeway under construction with a JOHNSON FLOAT effortlessly finishing a full slab width in its final pass. This unit steps up the daily production of any paving crew and reduces the amount of hand finishing. You owe it to your state (if you are a state highway official) and you owe it to yourself (if you are a paving contractor) . . . to investigate the outstanding merit of this finest of finishing machines.

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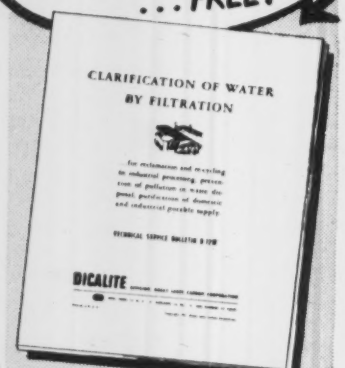

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MEN AND JOBS

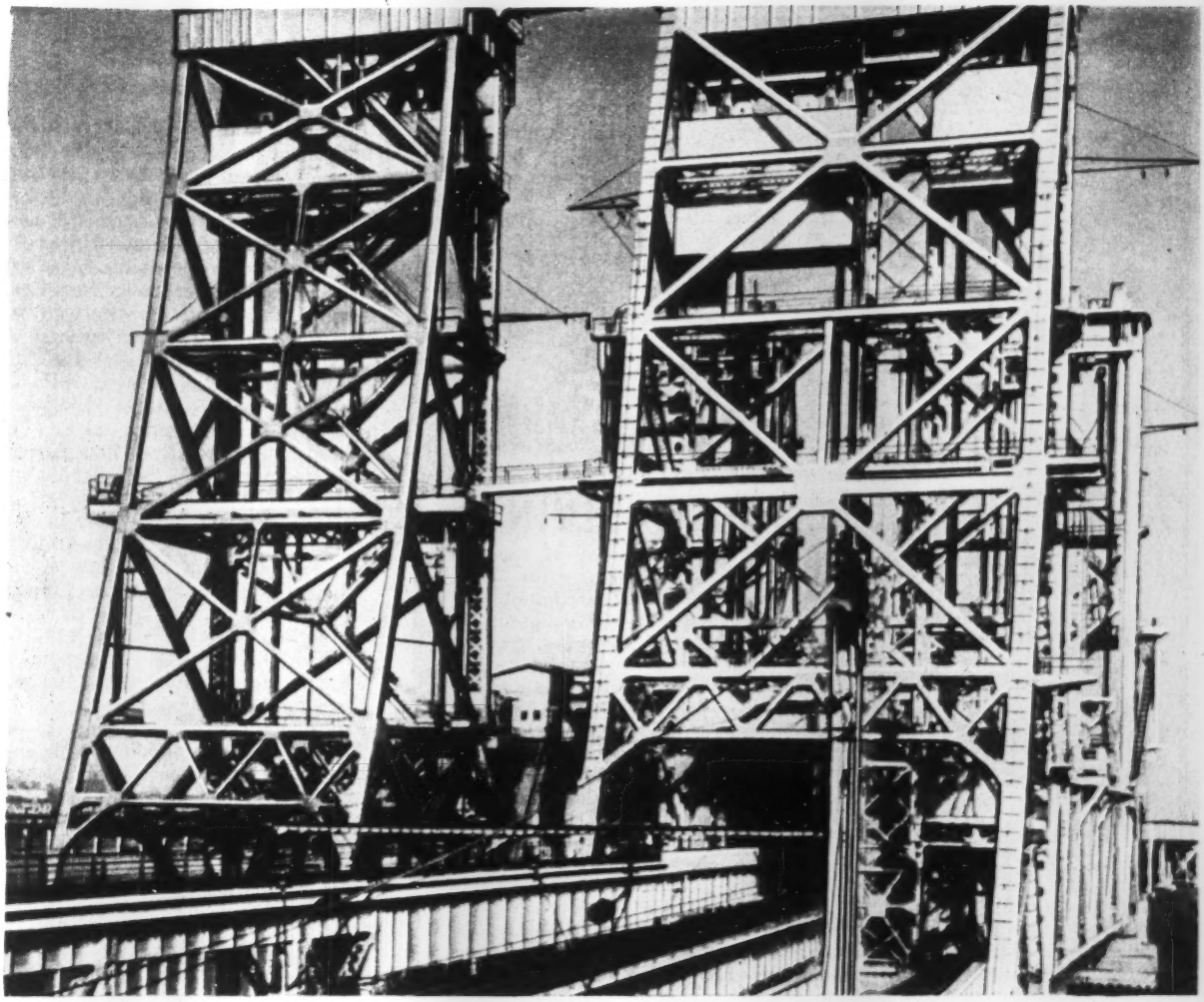
A MOBILE OFFICE—To check reports, Collins retires to his Lincoln.

of pipe 18 in. below the bottom in 12 hours. But when he took on another job in nearby Copano Bay, the material of the bay bottom proved to be different and his machine wouldn't work. Collins and assistants Jean Johnson and Billy Glascock spent six weeks underwater, dawn to dusk, on the bay bottom working out the problem for all kinds of materials. After rebuilding the trencher several times, they finally hit the right combination. The revamped trencher has since buried nine miles of line three ft. deep within 30 hours.

Through "controlled buoyancy," Collins has worked out a way to lay pipe across heavily travelled waterways without blocking traffic. Instead of floating the pipe in long lengths over the surface, the pipe is moved into position under water.

"The idea," Collins says, "was discovered by accident. On a job in 1948, we were launching pipe in mile-long lengths and towing it 18 miles out into the gulf, where we laid it in successive lengths by welding onto the previously laid sections. About halfway from the launchway to the laying site, one day, we ran into a terrific squall which whipped up 18-foot waves. I had the boys remove half the pontoons from the pipe and lay it on bottom, hoping that by getting it out of the seas we could leave it safely buoyed and save our boats and crews without losing or damaging the pipe.

"This storm blew four days, while we really sweated it out. When it was over, I put on diving gear and walked along the pipe. To my surprise, I could find no damage. The pipe was barely touching the soft gray mud, along its entire length. To save the two days' work of replacing pontoons, we decided to see if we could tow the pipe the remaining nine miles under water. It towed easily with only one medium-sized tug."



Raising the life span in a lift bridge

To bear the brunt of heavy traffic, the lift span in this bridge must perform reliably, must be tough. And to raise the life span of the entire bridge, there is no tougher, more reliable performance than the kind found in DULUX Metal Protective Paints.

DULUX primers and topcoats are chemically engineered to give the best adhesion and flexibility on high steel . . . to battle corrosion from exposure and moisture for *longer* periods than expected. What's more, DULUX flows out fast, smooth and level with remarkable hiding . . . dries quickly to a rugged, resilient coat . . . covers up to 600 sq. ft. per gallon.

On exposed steel surfaces, DULUX performance records stand at 10 years, 12 years and even longer periods. The lift bridge pictured above stood fully protected for 15 years before being recoated with DULUX. Service records like this mean substantial savings in maintenance costs.

So for all types of structural steel maintenance painting, write E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington, Del. Or consult the Du Pont Sales Technician in your area.

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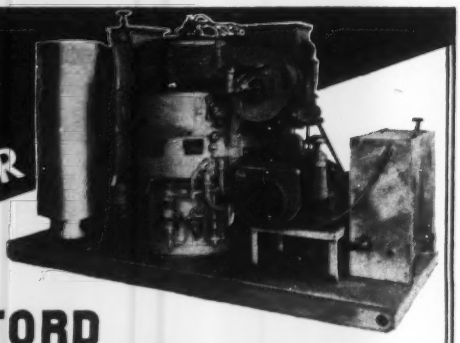

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"Kwik-Steam" Generators are made in sizes from 20 to 165 B.H.P. with either Electric Motor or Gasoline Engine. Can be mounted on a truck, crane, trailer or skids. For further details write for Pile Driving Bulletin.

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OBITUARIES

T. Brian Parsons, 45, manager of the permanent mold plant at the Aluminum Co. of America's Cleveland works since 1951, died July 7 at Shaker Heights, O. He was graduated as a civil engineer from Cornell University in 1930. His first post with Alcoa was as industrial engineer at its New Kensington, Pa., plant; then he went to company headquarters in Pittsburgh as sales development engineer. In 1940 he was sent to Vancouver, Wash., as district purchasing agent during construction of a smelting plant. He moved to Cleveland in 1949 as Alcoa's chief engineer.

Herbert Wilson, 76, partner in the contracting firm of Wilson and Midgley, Toronto, Ont., died July 6. A native of England, he went to Canada in 1905.

William H. Bowles, 60, former superintendent of construction and maintenance for the Union County, N. J., Park Commission, died July 13 in Somerville, N. J. He joined the commission as an engineer in 1923, and four years later was made superintendent.

Thomas J. Kenny, 56, operating engineer for the South District filtration plant of the water purification division, Department of Public Works, died July 14 in Chicago. He had been a city employee for 30 years.

Edgar C. Talbot, 80, former construction superintendent and operating manager for the American and Foreign Power Co. on projects in Brazil, died June 1 in Tucson, Ariz. During his career he was supervising engineer on construction of the Victoria, B. C., water system and also worked on hydro-electric projects in Pennsylvania.

Harry A. Hendren, 71, retired general contractor of Sacramento, Calif., died July 14.

Martin S. Grytbak, 70, bridge engineer for the City of St. Paul, Minn., since 1913, died June 24. Born in Norway, he received his engineering education in Trondheim. In 1908 he came to the United States and served as engineer in the bridge department of the Northern Pacific Railway Co., St. Paul.

Ernest C. Galloway, 73, contractor for 41 years in Louisville, Ky., died in Buechel, Ky., July 15.

Robert F. Ewald, 72, who retired from the Aluminum Co. of America in 1947 after 35 years in the hydraulic engineering department, died at Mt. Lebanon, Pa., July 17. A 1915 civil engineering graduate of the University of Wisconsin, he started as resident engineer on the construction of Chicoah Dam in Tennessee. He later helped with preliminary planning for Fontana Dam, built by TVA.

William R. Bingham, 68, construction engineer for the Wilcox Oil Co., died in Tulsa, Okla., July 13. Joining Wilcox Company in 1919, he built gas plants for the firm at Pampa and Slick, Tex., and did construction work at its refinery at Bristow, Okla.

Irwin E. Gaylord, 60, executive in charge of Canadian sales with the Jaeger Machine Co., died July 17 at Upper Arlington, O.

Joseph C. Marane, 52, civil engineer, died at Riverdale, N. Y., July 20. A graduate of Cornell University, he worked on such construction projects as the First National Bank building in Manhattan, Yale University dormitories and federal housing developments. He recently was associated with C. E. Youngdahl & Co., Inc., of Long Island City, N. Y.

J. Stuart Crandall, 62, president of Crandall Dry Dock Engineers, Inc., Cambridge, Mass., died July 20 at Concord, Mass. At one time he was a visiting lecturer in port engineering at Harvard University.

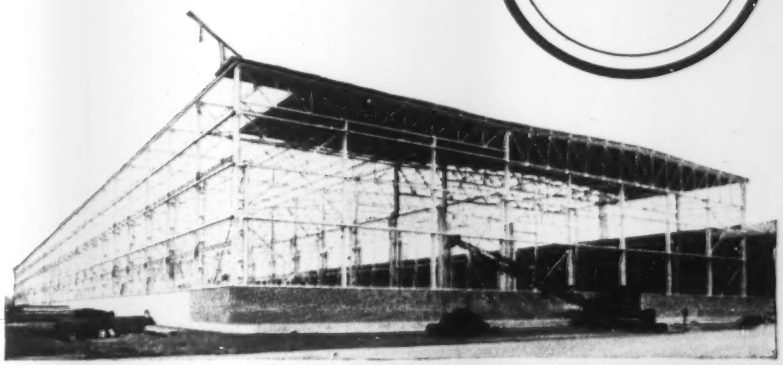
Herman C. Mathis, 64, of Westville, N. J., a consulting engineer for the Gulf Oil Co., died July 22 in Baltimore, Md.

Alexander M. Maclaren, 69, an associate of H. K. Ferguson, consulting engineer in Cincinnati, O., died July 22 in Constantia, N. Y. A native of Scotland, he came to the U. S. in 1925, joining the Hooker Electrochemical Co. in Niagara Falls, N. Y., as an engineer.

Charles Law, 79, a retired building contractor, died July 22 in Yonkers, N. Y.

George C. Lowell, 87, retired head construction engineer for the Peoples Gas, Light & Coke Co., Chicago, died July 21. He joined the company after working at steel plants in Joliet, Ill., and Pueblo, Colo.

CONSTRUCTION SCHEDULE: RUSH



Getting steel on the job to get this framework up on schedule took a lot of doing. Meeting a 60-day delivery deadline would be tough enough any time. Meeting it at a time of critical steel shortage posed a king-sized problem. But teamwork resulted in a job-speeding solution... and with no premium on construction costs.

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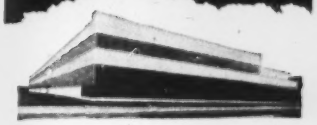

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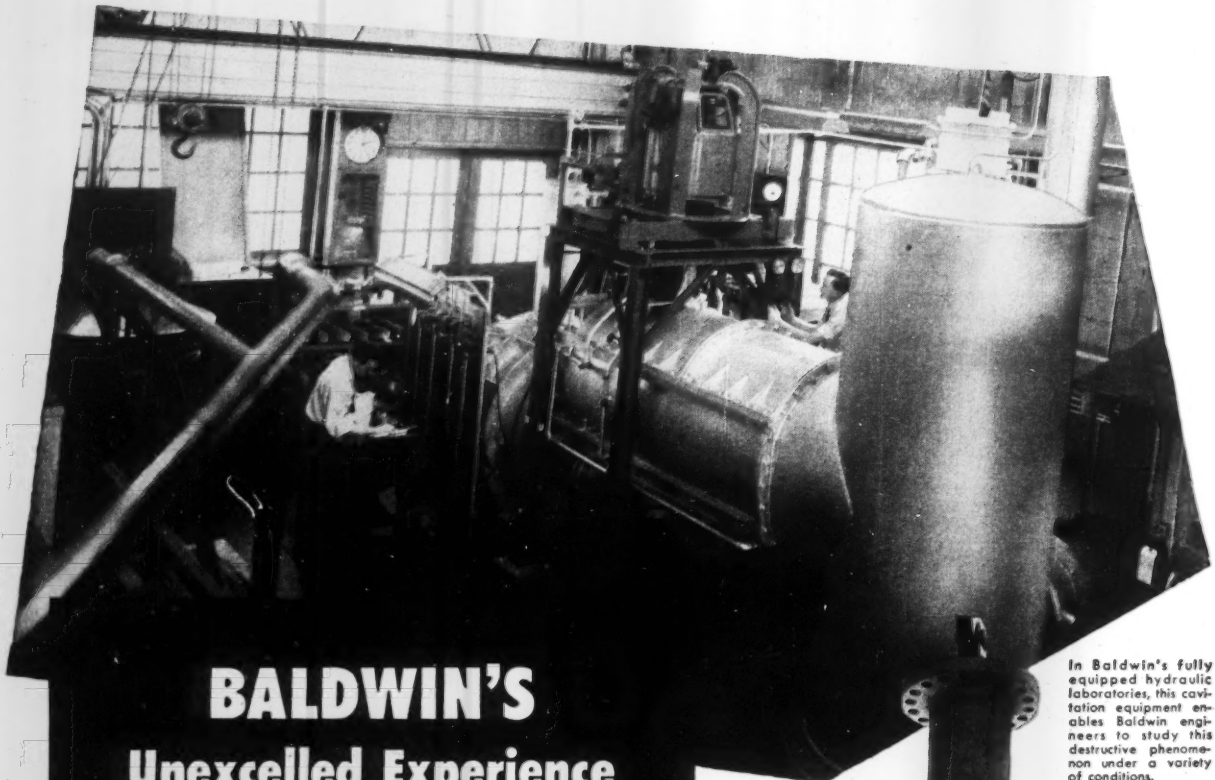

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BOOKS

Text on prestressing

PRESTRESSED CONCRETE—By Kurt Billig. 476 pp. D. Van Nostrand Co., 250 Fourth Ave., New York. $9.00

Design theory and construction methods for prestressed concrete structures are thoroughly covered in this latest text on the subject. However, the book appears to have been overly long in preparation, for it does not report developments that have been made in the field within the last two or three years.

This is pointed up by such statements in the preface as: "In the USA, prestressed concrete has been applied on a commercial scale only to the construction of fluid storage tanks and pressure pipes." Also: "No textbook has yet been published dealing with prestressed concrete as a whole . . ." It is obvious that these conditions ceased to exist more than two years ago.

Despite this shortcoming, however, engineers and architects who wish to become better acquainted with prestressing design and construction techniques will find the book useful. About one-third of the book is devoted to a presentation of fundamentals, history and examples of techniques used in Europe. Another third deals with design theory. The remainder consists of worked-out examples of the design of prestressed beams, bridges, poles, towers, railroad ties, highways, airplane runways, shell roofs, high-pressure pipe and storage tanks.

At the end of the book there is a code of practice for prestressed concrete proposed by the author.

Mr. Billig is a professor of civil engineering and director of the Central Building Research Institute of India.

INTRODUCTION TO THE THEORY OF PLASTICITY FOR ENGINEERS—By Oscar Hoffman and George Sachs. 276 pp. McGraw-Hill Book Co., 330 West 42nd St., New York 36, N. Y. $6.50.

ACCOUNTING GUIDE FOR DEFENSE CONTRACTS—By Paul M. Trueger. 331 pp. Commerce Clearing House, 522 Fifth Ave., New York 36, N. Y. $7.50.

ASTM STANDARDS-1952: Part I, Ferrous Metals, $12.00; Part II, Non-Ferrous Metals, $10.00; Part III, Cement, Concrete, Ceramics, Thermal Insulation, Road Materials, Waterproofing, Soils, $12.00; Part IV, Paint, Naval Stores, Wood Sandwich Construction, Building Construction, Fire Tests, $10.00. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

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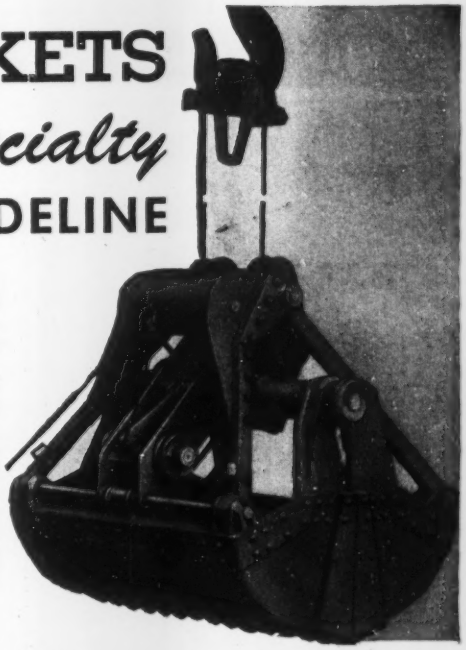

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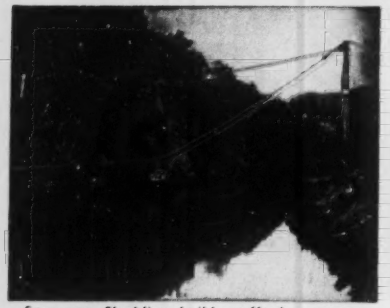
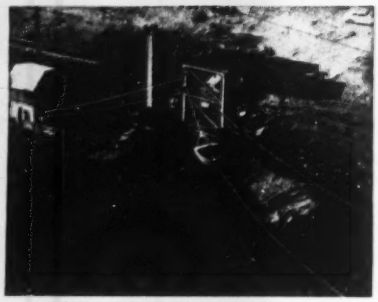


Sauerman Slackline builds cofferdam across gorge on river



Sauerman Scraper digs volcanic ash from hill and loads into cars.

How Sauerman Machines Cut Costs

With one man at the controls a Sauerman Scraper or Slackline Cableway can reach out 1,000 ft. or more and dig, haul and dump sand, gravel or other bulk material. Simple operation! Economical use of power!

A Sauerman machine can be installed to reach across a pit, pond, river or stockpile, or up to the top of a hill. It moves material rapidly anywhere within its wide radius. Flexible for varied ground conditions. Costs only a few cents per cubic yard handled. Gas, electric or diesel.

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CLEAN—Clogless, rivetless Tri-Lok joint prevents accumulation of dirt, moisture, rust.

STRONG—added strength provided at maximum load contact by shape and rigidity of nosing bar.

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Dravo Bldg., Pittsburgh 22, Pa.

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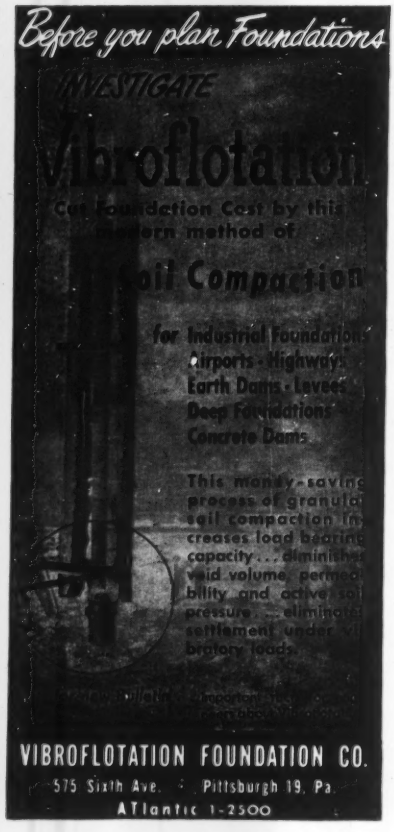
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LEGAL

Rights of contractor on cost-plus work

Where a cost-plus contract contemplated that changes would be made in the work as it progressed, the fact that the changes made by the architect were so substantial as to increase the cost of the work to a figure far in excess of what the owner had planned to spend, did not justify the owner's abandonment of the work.

Where the owner prevents the contractor from completing his contract, the contractor may bring an action to recover the fair and reasonable value of the work actualy performed; and his recovery is not limited to the price stated in the contract. However, where the contract provides for payment on a cost-plus basis, and the contractor brings an action to recover for the fair and reasonable value of the work performed up to the time of the abandonment of the same, his compensation cannot exceed the amount fixed by the contract—that is, the cost of the labor and materials furnished, plus the amount stipulated in the contract for profit and overhead.[1]

(1) Oliver L. Taetz, Inc. v. Groff et al., 253 S.W. 2d 824, Supreme Court of Missouri, Jan. 9, 1953.

Unsigned contract may still have force

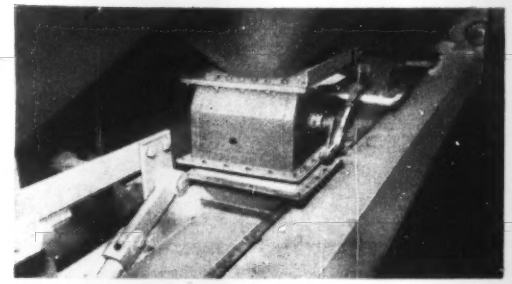
One who accepts and acts under a written agreement is bound by it even though he fails to sign it.[1] In this case there was an agreement to arbitrate disputes between employer and employee. The employer because of inadvertence had failed to sign the agreement, but when a dispute arose, participated in the selection of the arbitrators and only raised the objection of not having signed the agreement during the course of the arbitration proceedings, but continued to participate therein. Under these circumstances, the court held that the employer was bound by the agreement even though he did not sign it.

The above principle of law was also expressed in an opinion in a case[2] in the new York Court of Appeals as follows: "If a person has accepted a written agreement and has acted upon it he is bound by it although he may not have set his hand to the document."

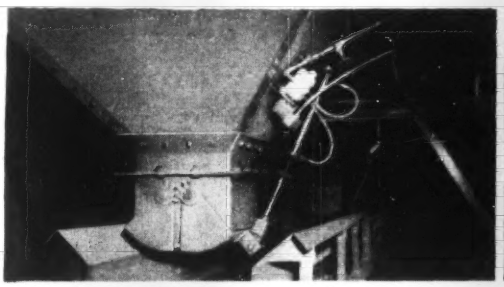
(1) Steinberg v. Goldstein, 116 N.Y.S. 2d 6.
(2) Newburger v. American Surety Co., 242 N.Y. 134, 151 N.E. 155.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

ANOTHER LEVITTOWN and ANOTHER HELTZEL



Heltzel patented tubular valve eliminates jamming, has pin-point accuracy.



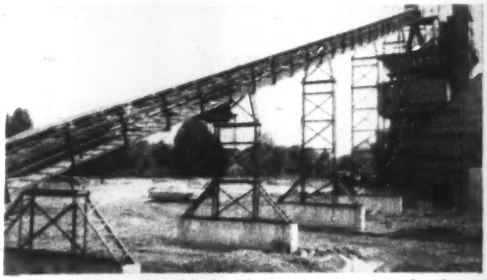
Double clamshell remote control aggregate gate adjustable to control speed.

Levitt's third Heltzel plant promises new concrete batching records for leading city builder.

famous city builder sets third HELTZEL plant into operation at fabulous Bucks County development

Down in Bucks County, Pennsylvania, William J. Levitt, head of the city building firm that bears his name, recently set into operation his third Heltzel concrete batching plant. The fact that his two previous Heltzel plants set record-smashing production records convinced him of Heltzel's ability to produce.

In fact, the first plant played a big part in helping him astound the construction world with his Long Island Levittown. It batched concrete on an average of 1800 cubic yards per day, and on occasion rang up amazing 2,000 yard plus days. His second Heltzel plant was used mainly in the construction of concrete blocks, and untiringly kept pace with the fastest concrete block production on record.



Clean line, all-welded A-frame comes completely assembled, easy to erect.

This new Heltzel plant promises even greater things. It's completely integrated—from supply hoppers to conveying equipment to automatic batcher—it's completely designed and built by Heltzel to give Levitt the nation's most efficient concrete batching. Its capacity is an astonishing 300 cubic yards per hour, it's fully automatic with high speed electronic batching that is accurate to the fraction of a pound; the entire operation is controlled from a central control area, and it bristles with many other new Heltzel exclusives that put an end to guesswork and human error in concrete batching.

Portable or stationary, large or small—if you want the finest in modern batching equipment get the Heltzel story before you buy. Heltzel engineers will be happy to work with you in developing just the plant you need for your operations.

The Heltzel Steel Form and Iron Co., Warren, Ohio

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Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. O. WETZEL, L. M. WINISKI, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† Mass., Bedford—ALERT HANGAR—B.A. 8/18—U. S. Eng., 857 Commonwealth Ave., Boston, alert hangar bldgs. Hanscom Air Force Base, Eng-19-016-54-11. $500,000. Edwin T. Steffian, 11 Beacon St., Boston, archt. CD 7/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta,

J. R. Cianchette, Pittsfield, Me. CA. $508,771. bit. macad., b. conc. road 5.395 mi. H. Norridgewock and Skowhegan, F.A. Proj. Nos. F 025-2 (3) and F 033-1 (2).

Forest Frederick, Pittsfield, Me. CA. $102,371. grav. road 2.253 mi. N. Cherryfield, S.P. No. 950. Bids July 29. CD 7/23.

Eugene R. Eisenberg, Inc., 30 Huntington Ave., Boston, Mass. LB $225,000. bath house station; LB $295,000. est. $300,000. Crescent Beach Station, REVERE, MASS. Metropolitan Transit Auth., 31 St. James Ave., Boston, Mass. Bids July 28. CD 7/15.

F. D. Rich Co., Inc., 322 Main St., Stamford, Conn. CA $200,000. pumping station, North Stamford Reservoir, STAMFORD, CONN. Stamford Water Co., 103 Summer St., Stamford, Conn. Bids July 22. CD 7/20.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Wadhams & May Co.**, 15 Lewis St., Hartford, Conn., CA. Approx. $1,400,000 SCHOOL and GYMNASIUM, Whiting Lane, WEST HARTFORD, CONN., Bd. Educ., **F. L. Conrad, chn.**, 51 Memorial Dr., West Hartford, Conn. Bids **July 2.** CD **7/9,** under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

Md., Rockville—B.A. 8/14—At office Montgomery Co., Purchasing Bureau, Court House, Contr. 568, installation 4,400 sq. ft. 4-in. sidewalks, 6,000 sq. ft. sod, certain streets in Chestnut Ridge Manor and Chestnut Hills; Contr. 607, 5,375 sq. ft. 4-in. concrete sidewalks, 11,125 sq. yd. sod, in Wyngate, Hendry Estates, Alta Vista Terrace; Contr. 625A, 700 lin. ft. concrete curbs, laying 950 sq. ft. 6-in. bit. pavement Maybrook Ave. in Oakland Terrace; 24,000 cu. yd. roadway, excav., 23,000 sq. yd. macad. paving Norwood Rd., MC Rte. 5-146. Plans deposit $5 each.

† **MARYLAND**—B.A. 9/3—At office H. J. Spelman, div. eng. Bureau P. Rds., Dpt. Commerce, 1440 Columbia Pike, Arlington, Va.,

Prince Georges Co.—c. conc. 6.359 mi. from ½ mi. north of Good Luck Rd. to Laurel-Bowie Rd. Baltimore-Washington Pkwy., Proj. 1D5-E5-F6; adv. ENR 8/13.

† **Del., Dover**—BUILDING—B.A. On or About 9/10—U. S. Eng., 121 N. Broad St., Phila. 1, Pa., bldg. and electric power facilities for radar beacon, Dover Air Force Base, Eng. 36-109-54-5. CD 9/31/51.

BIDS ASKED—BUILDINGS

▲ **Pa., Lansdale**—HIGH SCHOOL, etc.—B.A. 8/19—North Penn Joint School Bd., Lansdale, new Junior High School, addn. to Senior High School $2,800,000. Howell Lewis Shay, Packard Bldg., Phila., archt. William H. Gravell & Assocs. 2031 Chestnut Bldg., Phila., Pa., engrs. CD 11/11.

▲ **D. C., Wash.**—HOSPITAL—B.A. 9/3—Faulkner, Kingsbury & Stenhouse, archts., 1200 18 St. N.W., hospital, 12 and Varnum St. N.E., for Providence Hospital, 2 and D Sts. S.E., $7,000,000. Plans deposit $100. CD 1/11/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Triborough Bridge & Tunnel Auth., Administration Bldg., Randall's Island, New York 35, N. Y.

Gull Contrg. Co. Inc., 33-15 Lawrence St., Flushing, N. Y., CA $4,827,212, grading, drainage structures, paving, utilities, Contr. No. QME-1, Queens-Midtown Expressway, Connecting Hy. to Maurice Ave., Queens Boro. Bids July 29. CD 7/31 under LB.

▲ **Horn Constr. Co.**, 2174 Hewlett Ave., Merrick, N. J. CA $1,378,800. Contr. 8, concrete ramps on Brooklyn and Queens approaches of New Vernon Avenue Bridge between Brooklyn and Queens Boros, BROOKLYN, N. Y. Dpt. P. Wks., Municipal Bldg., New York 7, N. Y. Bids July 14. CD 7/28, under LB.

Swedesboro Boro, Swedesboro, N. J. rejected bids sewage treatment plant, pumping stations, sewer extens. and force mains, LB $157,000. est. $187,808. SWEDESBORO, N. J. CD 7/16. Will re-advertise.

▲† **Tecon Corp.**, 1201 Main St., Dallas, Tex., CA $4,906,947. parking apron and taxiway, Inv. Eng 36-109-53-403. McGuire Air Force Base. WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids July 8. CD 7/21 under LB.

▲ **Nello L. Teer Co.**, Trust Bldg., Durham, N. C. LB $6,682,570. est. $5,000,000, flood control dam and reservoir on First Fork of Sinnemahoning Creek, Cameron and Potter Counties. PENNSYLVANIA. General State Auth., 18 and Herr Sts., Harrisburg, Pa. Bids July 29. CD 6/29.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., North Office Bldg., State Capitol, Harrisburg,

Conduit-Foundation Corp., 770 S. Schuylkill Ave., Phila., Pa., LB, $8,194,351, 20,961 ft. separated hys. w/c. conc. pavement; 10 I-beam and 5 plate girder bridges, T. R. Alt. 1, Phila., Lower Merion Twp., Montgomery and Philadelphit Counties:

Latrobe Road Constr. Co., Latrobe, Pa., LB, $1,330,959. 24,479 ft. c. conc., 22 ft. wide, one I-beam bridge, K. T. 30, Unity, Derry and Ligonier Twps., Westmoreland Co. Bids July 31. CD 7/6.

▲ **City**, Bureau Water Supply, 503 Municipal Bldg., Baltimore, Md. cancelled bids to have been opened July 29. First Phase, Ashburton filtration plant, water treatment plant, 120 m.g. cap. wash. water lake ,small residence, planting, seeding, Total est. BALTIMORE, MD. $12,500,000. CD 7/13.

▲ **City**, Bureau Water Supply, 503 Municipal Bldg., Baltimore 2, Md., cancelled bids to have been opened Aug. 5, Second Phase Ashburton filtration plant 120 m.g.d. BALTIMORE, MD. Total est. $12,500,000, CD 7/31.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **E. I. du Pont de Nemours & Co. Inc.**, duPont Bldg., Wilmington, Del. Own Forces. $1,000,000. PLANT to mfg. "Freon" a fluorinated hydrocarbon compound, DEEPWATER POINT, N. J.

▲ **Construction Service Co.**, 2409 N. Broad St., Phila., Pa., CA. $4,000,000. HOUSING development, FORT DIX, N. J. Fort Dix Apartment Corp., c/o contractor. Edward A. L. Cox & Martin Guttman, 709 Market St., Camden, N. J., archts.

▲ **Howy Constr. Co. Inc.**, 60 E. 42 St., New York, N. Y. CA. $1,850,000. assembly line, PLANT, MILLVILLE, N. J. Lanier Aircraft Corp., Croyden, Pa. Levien Associates, Inc., 450 7th Ave., New York, N. Y., archt.

L. T. Jackson, 36 N. Illinois Ave., Atlantic City, N. J. Separate Contracts. $300,000. APARTMENT, PLEASANTVILLE, N. J. Frank A. Amidio, 60 Broad St., Red Bank, N. J., archt.

Mahony-Troast Constr. Co., 790 Bloomfield Ave., Clifton, N. J. CA. est. $375,000. 5 story, 50x150 ft., steel PLANT OFFICE, RIDGEFIELD PARK, N. J. Continental Paper Co. and Alford Cartons Co., Ridgefield Park, N. J. L. F. Fellgraff, Ridgefield Park, N. J., archt.

▲ **Mahony-Troast Constr. Co.**, 790 Bloomfield Ave., Clifton, N. J. CA. $1,000,000. OFFICE addn., and paving work required, TRENTON, N. J. New Jersey Manufacturers Assoc. 363 W. State St., N. J. Voorhees, Walker, Foley & Smith, 101 Park Ave., New York, N. Y., archts.

Saxony Constr. Co., 8 W. Baltimore Ave., Lansdowne, Pa. Separate Contracts. $300,000. RESIDENTIAL development, Kingswood Lane, BROOMALL, PA.

David M. Hunt, 112 S. 16 St., Phila., Pa. CA. $350,000. mechanical development LABORATORY bldg. and ADVERTISING SERVICE DPT. bldgs. CHESTER, PA. Scott Paper Co., Chester, Pa. CD 7/13.

▲ **Gottlieb Schneider**, 1434 Monecacy St., Bethlehem, Pa. LB $1,380,000. Consolidated HIGH SCHOOL, COOPERSBURG, PA. Southern Lehigh School Dist., Coopersburg, Pa. Wolf & Hahn, 459 Hamilton St., Allentown, Pa., archts. Bids July 15.

J. Marcellus & Co., 5214 W. Girard Ave., Phila., Pa. CA. $534,720. Chatham Park Elementary SCHOOL, HAVERTOWN, PA. Haverford Twp. School Dist., Havertown, Pa. Bids May 26. CD 6/8, under LB.

Stanley Mumma, 131 E. Orange St., Lancaster, Pa. Separate Contracts. $360,000. RESIDENTIAL development, LANDISVILLE, PA. Malcolm Pownall, Coatesville, Pa., archt.

Owner, c/o Agent E. J. Brooks Co., 534 W. Main St., Lansdale, Pa. Separate Contracts. $450,000. RESIDENTIAL development, Welsh Rd., LANSDALE, PA.

▲ **Greenhill Development Co. Inc.**, Media, Pa. Separate Contracts. $4,500,000. RESIDENTIAL development Providence and Moore Rds., MEDIA, PA.

S. Yellin & Son, 222 N. 11 St., Phila., Pa., CA. $591,000. SCHOOL and auditorium, MERION (Phila. P.O.) PA. Temple Adath Israel, Montgomery and Wynnewood Aves., Wynnewood, Pa. I. Demchick, 246 S. 15 St., Phila., Pa., archt.

Fox-Bilt Homes, Inc., 329 Montgomery Ave., Phila., Pa. Separate Contracts. $310,000. RESIDENTIAL development, Wynnewood Ave., NARBERTH, PA.

Manor Building Co., 1518 Walnut St., Phila., Pa. Separate Contracts. $305,000, RESIDENTIAL development, Paper Mill Rd., ORELAND, PA.

Edwin E. Hollenback, Jr., 5624 Vine St., Phila., Pa., CA $500,000. GARAGE, RETAIL STORE, parking area, PHILA., PA. Sears Roebuck & Co., 4640 Roosevelt Blvd., Phila., Pa. Bids July 14. CD 7/16.

Mariani Constr. Co., 6922 Roosevelt Blvd., Phila., Pa. Separate Contracts. $310,000. RESIDENTIAL DEVELOPMENT, Revere St., PHILA. PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲ **Ranvil Constr. Co.**, Edgewood Dr., Fox Chapel, Pittsburgh 19, Pa. CA. $1,500,000, 18 two-story brick, block APARTMENTS, 118 families. PITTSBURGH, PA. Belmar Gardens, Inc., 306 Triangle Bldg., Pittsburgh, Pa. (Correction—contractor). CD 7/30, under CA.

▲ **Edwin E. Hollenback**, 5624 Vine St., Phila., Pa. CA. $1,036,946, Junior HIGH SCHOOL, WEST CHESTER, PA. West Chester Joint High School Bd., 320 N. Church St., West Chester, Pa. Bids June 18. CD 7/13, under LB.

William B. Dorey & Son, Millsboro, Del. CA. $300,000. SHOPPING CENTER, LEWES, DEL. William Derrickson, c/o contractor.

Andrews Constr. Co., Odessa, Del., Separate Contracts. $300,000. RESIDENTIAL development, Kaimensi Rd., STANTON, DEL.

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects inviived except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

SOUTH

BIDS ASKED—BUILDINGS

† **Va., Arlington**—RADIO TOWER—B.A. 8/19—Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C., furnishing, erecting steel radio tower at Naval Radio Station (L) (T) NOY-78938. Plans deposit $10.

SOON LETS CONTRACT—BUILDINGS

Ky., Elizabethtown—CHURCH—St. James Parish, Elizabethtown, soon lets contract, 2 story, bsmt., 58x110 ft., brick veneer L-shaped church, $300,000, Thos. J. Nolan & Sons, Kentucky Home Life Bldg., Louisville, Zone 2, archts. Southern Engineers, 419 W. Main St., Louisville, engrs.

▲ **Ky., Louisville**—ASSEMBLY PLANT—Ford Motor Co., 3000 Schaefer St., Dearborn, Mich., soon lets contract foundations for Assembly Plant No. 2, admin., garage, employees facilities, auxiliary bldg., except boiler home, $4,000,000. Albert Kahn Associated Architects & Engineers, Inc., 345 New Center Bldg., Detroit, Mich., engr.-archt. CD 7/30.

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- *Ability to handle trash* without clogging or losing prime.
- *High efficiency and low fuel cost.*

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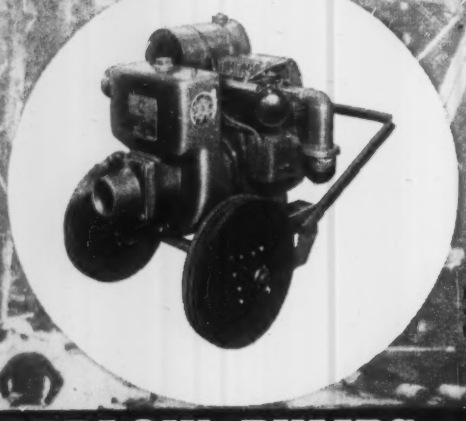

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HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

WEST VIRGINIA—West Virginia Turnpike Comn., 1340 Wilson St., Charleston, Zone 5,
Lewis & Bowman, Inc., P. O. Box 743, Goldsboro, N. C. LB **$694,120**. Contr. 34, constr. rein.-con. bridge decks on 26 bridges, steel superstructure by others, pipe handrail, Raleigh and Fayette Counties. Bids July 28. CD 7/7.

NORTH CAROLINA—State Hy. and P. Wks. Comn., Raleigh,
John H. Brinkley, Thomasville, N. C., LB **$80,845**. est. $75,000-$100,000. structures on 5.02 mi. Proj. 7316, S-297 (5), Davie Co.; LB **$171,872**, est. $200,000-$225,000, structures on 7.32 mi. Proj. 7638, F-177 (5) Surry Co. Bids July 28. CD 7/17 under Streets and Roads.

NORTH CAROLINA—State Hy. and P. Wks. Comn., Raleigh,
W. E. Graham & Sons, Cleveland, N. C.; LB **$128,018**. est. $150,000-$175,000, grading, CABC, bit. surf. tr. 5.02 mi. Proj. 7316, S-297 (5), Davie Co.;
J. C. Critcher, Inc., Technical Bldg., Asheville, N. C. LB **$201,950**. est. $300,000-$400,000. grading 7.32 mi. Proj. 7638, F-177 (5) Surry Co. Bids July 28. CD 7/17.

MISSISSIPPI—State Hy. Dpt., T. C. Robbins, dir., Jackson,
Talbert & Brown Contractors, Inc., 19 22 Ave. S., Meridian, Miss. CA **$84,167**. incidental grading, base course, double bit. surf. tr. 5.863 mi. on Miss. Hy. 43 between Thomastown and McVille, Proj. Work Order 3033, Leake and Attala Counties;
Worsham Bros., Corinth, Miss. CA **$70,764**. grade, drain, culverts, grav. surf. course 4.076 mi. on Miss. Hy. No. 4 between Ripley and Boonville, Proj. S 0935 (5) A, Tippah Co.;
M & W Constr. Co., Tupelo, Miss. CA **$326,300**. grading, drainage, culverts, bridges clay grav. surf. 9.643 mi. Miss. Hy. 41 between Troy and Pontotoc, Proj. F 048-1 (2), Pontotoc Co. Grand total $481,-231. Bids July 28. CD 7/17.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,
Harry Wyse, Versailles Rd., Lexington, Ky. LB **$172,803**. repairs to bridge Paintsville-Inez Rd., SP 58-37, Johnson Co. Bids July 24. CD 7/9.

KENTUCKY—Commonwealth of Ky., Dpt. Hys., Frankfort,
State Contg. & Stone Co., Hartford, Ky. LB **$81,289**. bit. macad. (penetration type on waterbound macad base) 3.856 mi., Moseleyville-McLean County Line Rd., SP 30-437, Daviess Co.;
Adams Constr. Corp., Paintsville, Ky. LB **$68,319**. bit. road mix Class C-1 9.008 mi., McCarr-Ransom-Ky 199 Rd., SP 98-683, Pike Co.;
Nally & Hamilton, Bardstown, Ky. LB **$267,058**. grade, drain, traffic bound limestone 7.839 mi., Hyattsville-Hockley-Kirksville Rd., S 491 (1), RS 40-366, 76-571, 76-591, Garrard and Madison Counties;
Kentucky Road Oiling Co., Frankfort, Ky. LB **$63,442**. bit. road mix Class C-1 7.896 mi., Hotspot-Whitesburg Rd., Ulvah-Linefork, RS 67-439 and RS 67-599, Letcher Co.
Middle West Roads Co., Noblesville, Ind. LB **$76,716**. bit. surf. Class C-1 (limestone aggregate) A-2 seal, 12.549 mi., SP 42-68, 42-238, RS 18-423, Graves and Calloway Counties;
O. L. Depp, Owensboro, Ky. LB **$152,247**. grade, drain, traffic bound grav. 9.811 mi., Ky-144 Spice-Knob-Gatewood Rd., S 330 (2), RS 3-617, Daviess Co.;
R. C. Durr, Walton, Ky. LB **$221,401**. grade, drain, traffic bound river grav. (steel piling) 3.956 mi., Big Bone-Rabbit Hash Rd., S 1 (2), SP 8-230, Boone Co.;
Geoghegan & Mathis, Bardstown, Ky. LB **$90,397**. Alternate No. 4 0.53 mi., Capitol City Airport runway, taxiway, apron area, SP 37-645, Franklin Co. Bids July 24. CD 7/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Harry & Joseph Cashvan**, 112 Tyler Crescent St., Portsmouth, Va. Owner Builds. **$2,800,000**. 300 one story, frame RESIDENCES, PORTSMOUTH, VA.

▲ **Harry Jaffe**, 50 Church St., New York, N. Y. Separate Contracts. **$3,000,000**. OFFICE, HOSPITAL and MFG. bldg., FERNANDINA, FLA. Owner will design project.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Illinois**—B. A. 8/18—U. S. Eng., 420 Locust St., St. Louis 2, Mo., clearing and snagging on Macoupin Creek, Greene and Jersey Counties. Inv. No. CIVENG-23-065-54-1. Extended date. CD 7/8.

† **Illinois**—B.A. About 8/26—U. S. Eng., 420 Locust St., St. Louis 2, Mo., reconstr. of sanitary sewer and stone revetment for outlet channel, Wood River Drainage and Levee Dist. Proj. Item VI-D. Madison Co. on the eastern bank of the Mississippi River, opposite approximate river mile 202 above the mouth of the Ohio River, and near the foot of Central Ave., Alton, Inv. No. CIVENG-23-065-54-11. CD 12/8/52.

BIDS ASKED—BUILDINGS

Wis., Milwaukee—FACTORY—B.A. 8/18—Evinrude Motors, 4143 N. 27 St., 1 story 330x427 ft. factory addn., 2 story 73x202 ft. office. Plans deposit $2. Eschweiler & Eschweiler, 720 E. Mason St., Zone 2 engrs.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—State Hy. Dpt., Columbus, Zone 15, **Harley E. Calvin & Co.**, Box 284, Marietta, O., LB, **$83,360**, Type T-35 and B-119 and structure 0.303 mi. SR 251-2.25, Brown Co.; LB **$84,876**, Type T-32 on B-20 and structure 0.44 mi. SR 75-(16.00), (17.10), Hocking Co.;

Frysinger Constr. Co., 16 E. Broad St., Columbus, O., LB, **$723,787**, Type T-71 and structure 2.183 mi. USR 25-15.84; USR 30N-20.08, FI 963 (2), F-476 (11), Allen Co.;

Smith Constr. Co. of Ohio, P.O. Box 515, Vienna, O., LB, **$87,658**, Type T-35, 1.163 mi. CR 410, S-349 (3) (City of Salem), Columbiana Co.;

The Great Lakes Constr. Co., Box 2278, Brooklyn Sta., Cleveland, O., LB, **$1,288,695**, Type T-35 and structures 7.543 mi. USR 42-(4.80-11.84), A-FI-UI 83 (2), (City of Parma) (Villages of Parma Heights, Middleburg Heights and Strongsville), Cuyahoga Co.;

Dandrea & Nardini Constr Co., 737 Broadway, Lorain, O., LB, **$263,965**, Type T-50 and structure 0.307 mi. CR 27, S-1101 (1), (Village of Olmsted Falls), Cuyahoga Co.;

A. J. Ronyak, Inc., Box 277, Burton, O., LB, **$122,686**, Type T-32 13.608 mi. CR 4, 6 and 10, S-480 (3) S-744 (3), S-1012 (6), Geauga Co.;

Hull Resurfacing Co., 329 Pillow St., Butler, Pa., LB **$82,954** Type T-34 on T-33, 4.225 mi. CR 409, S-1012 (4), Lake Co.;

Launder & Son, Inc., Station E, Box 6, Toledo, O., LB, **$507,950** Type T-50, 1.703 mi. SR-120 (21.54-22.13) 0.00, A-U-399 (4), Lucas and Wood Counties;

Clyde L. Moore & Clyde L. Moore, Inc., R.F.D. No. 1, Lowellville, O., LB, **$90,920**, Type T-35 on B-20 and structure 0.303 mi. CR 100, S-1136 (1), Mahoning Co.;

Harper Supply, Inc., 118 W. Front St., Napoleon, O., LB, **$142,697**, Type T-35 and structure 0.65 mi. SR 707 (16.92-16.96), S-1132 (1), (Village of Mendon), Mercer Co.;

Frank M. Novelli, 400 Elm Rd. N.E., Warren, O., LB, **$60,437**, Type T-35 and structure 0.188 mi. CR 79-A, S-123 (4), Summit Co.;

Fenton Constr. Co., P.O. Box 310, Ashland, O., LB, **$103,536**, Type T-35, 1.629 mi. USR 68-5.82; SR 70-17.59-18.54, (City of Springfield), Clark Co.;

The Murray Constr. Co., P.O. Box 231, Waverly, O., LB, **$62,827**, Type T-35 on SS-5 and structure 0.284 mi. SR 730-2.33, Clinton Co.;

McNamara & Reder, R.D. No. 4, Delaware, O., LB, **$114,192**, Type T-35 on B-119 and structure 0.56 mi. USR 36-19.17, Delaware Co.;

Chas. S. Ratzlaff Constr. Co., N. Market St., McArthur, O., LB, **$108,900**, Type T-32 and B-20 on 0.677 mi. SR 664-16.20, Hocking Co.;

Manix Brothers, R.R. No. 1, Greenville, O., LB, **$135,-935**, Type T-35 and structure 0.79 mi. SR 117-3.29 Logan Co.;

C. E. Edgington & Son, 1220 S. Main St., Findlay, O., LB, **$64,509**, Type T-32 on B-119 and structure, SR 114-8.33 Paulding Co.;

cancelled bids to have been opened July 28, Type T-32 on B-20 and structure 3.169 mi. CR 110, S-434 (3), Athens Co. CD 7/9.

Visintine & Co., 1315 Edgehill Rd., Columbus, O., LB **$764,102**, est. $808,331, 500-ft. steel superstructure, County Line Bridge, spanning Hoover Dam, COLUMBUS, O. City, City Hall, Columbus, O. Burgess & Niple, 584 E. Broad St., Columbus, O., engrs. Bids July 28. CD 6/29.

▲ **Fred C. Rowley & Sons**, Whiting, Ind., CA Whiting station constr.;

Morrison Constr. Co., 1834 Summer St., Hammond, Ind. CA, approx. 16 mi. 12-in. line in Lake Co.;

Great Lakes Dredge & Dock Co., 122 S. Michigan Ave., Chicago, Ill., CA, Indiana Harbor Canal crossing;

Somerville Constr. Co., 6648 Fulton Rd., Ada, Mich. CA, 102 mi. 12-in. line;

R. B. Potashnick, Inc., Box 205, Cape Girardeau, Mo. CA, 101 mi. 10-in. line;

R. L. Coolsaet Constr. Co., 7608 Williamson St., Dearborn, Mich., CA, 18 mi. 10-in. line, for 238 mi. 10- and 12-in. refinery products line from Whiting, Ind. to River Rouge, Mich. INDIANA and MICHIGAN. Total est. **$11,550,000**. Standard Oil Co. of Indiana, 910 S. Michigan Ave., Chicago, Ill. CD 12/12/52.

ILLINOIS—State Div. Hys., Springfield,

Rieth-Riley Constr. Co., W. Madison St., Goshen, Ind. CA. **$658,176**, P.C.C. pave and three bridges 4.81 mi. Ill. 1, Iroquois Co. Bids July 17, awarded July 29. CD 7/22, under LB.

ILLINOIS—State Div. Hys., Springfield.

Chas. Ind. Co., Point Ave. R.R. 1, Rockford, Ill. CA. **$579,951**. concrete roadway 1.29 mi., bit. resurf. 0.76 mi. Ill. No. 2, Winnebago Co. Bids July 17, awarded July 30. CD 7/22, under LB.

Michael J. McDermott, 30 N. LaSalle St., Chicago 2, Ill., LB, **$147,428**, grade separation over Addison Creek, 25 Ave., Broadview;

Superior Concrete Constr. Co., 5113 Woodlawn Ave., Chicago 15, Ill., LB, **$82,469**, bridge over Deer Creek on State St. near Chicago Heights;

Kenny Constr. Co. 111 W. Washington St. Chicago 2, Ill., LB, **$472,041**, grade separation over Congressway, Crawford Ave., Chicago;

Orr Constr. Co., 27 19 St., Chicago Heights, Ill., LB **$119,409**, bridge over Plum Creek on Steger Rd. near Chicago Heights;

Milburn Bros., Central St., Mt. Prospect, Ill., LB **$165 621**, 25 Ave. Extension over Salt Creek, south of Broadview, CHICAGO, ILL. Cook Co., County Bldg., Chicago, Ill. Bids July 28. CD 7/23.

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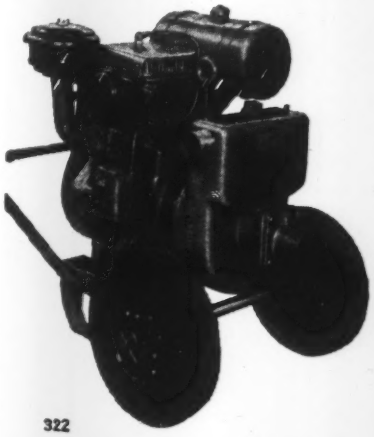
1. Non-Recirculatory Positive Priming	YES	YES	NO	YES	NO	NO
2. Self-Cleaning	YES	YES	NO	YES	NO	NO
3. Low Suction Inlet	YES	NO	NO	NO	YES	NO
4. Horizontal Discharge	YES	NO	YES	YES	YES	YES
5. Metal - to - Metal Grease - Lube Seal	YES	YES	YES	YES	YES	YES
6. Vacuum Gauge Plug	YES	NO	NO	NO	YES	YES
7. Discharge Gauge Plug	YES	NO	NO	NO	YES	NO
8. Supplied Complete with Male Fittings	YES	NO	NO	NO	NO	NO
9. Impeller Keyed to Shaft	YES	NO	NO	NO	NO	NO
10. Only One Gasket	YES	YES	NO	YES	NO	NO
11. Replaceable Wearing Parts	YES	YES	YES	YES	YES	NO
12. Convertible Base and Chassis	YES	NO	YES	YES	NO	NO



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J. L. Simmons Co., 185 N. Wabash St., Chicago 1, Ill., LB, $993,563 Washington Park Field House, 56 and S. Park Ave., CHICAGO, ILL. Chicago Park District, 425 E. 14 St., Chicago 5, Ill. Bids July 23. CD 7/8.

▲ **Standard Paving Co.** 30 N. LaSalle St., Chicago, Ill., LB, $751,907, Outer Drive Extension from Foster to Brynmar;

Rock Road Constr. Co., 5915 N. Rogers Ave., Chicago 26, Ill. LB, $103 855, resurf. Canal St. from 18 to Madison St;

Louis Scully, 6127 N. Hiawatha St., Chicago 30, Ill., LB, $69,150, paving Roberts Rd. and 71 St.;

J. P. Constr. Co., 27 19 Place, Chicago Heights Ill., LB, $123,772, paving 115 St. from Cicero to Crawford Aves., near CHICAGO, ILL., Cook Co. County Bldg. Chicago, Ill. Bids July 28. CD 7/23.

▲ **MICHIGAN**—State Hy. Dpt., 222 Townsend St., Lansing, Zone 13,

Louis Garavaglia, 24240 Mound Rd., Center Line, Mich. LB $1,611,311, est. $1,665,000. 2 rein.-con., steel bridges Expressway Interchange and other Third Ave. over Edsel Ford Expressway, BUI B 15 of 82-22-12 C2-U, Wayne Co.; LB $165,547, est. $160,000. rein.-con. T-beam bridge Detroit-Toledo Expressway, over South Huron River Dr., M B2- of 58-3 C1-R, Monroe Co.;

Gene Fewell, 930 Ellsmere St. N. E., Grand Rapids, Mich. LB $266,564, est. $280,000. rein.-con., steel bridge and approach, relocation of U S-31 over Pentwater River, F B1 of 64-10-11 C1-R (F 128-24), Oceana Co.;

C. A. Hull, Dryden, Mich. LB $147,274, est. $150,000. separation structure Detroit-Toledo Expressway, rein.-con. T-beam over Post Rd. south of Newport, M B1 of 58-7-26 C1-R, Monroe Co.;

Fitch-Eva Co., Howell, Mich. LB $137,610, est. $130,000, Detroit-Toledo Expressway separation structure over Sigler Rd., M B4 of 58-3-23 C1-R, Monroe Co. Bids July 29. CD 7/15.

MICHIGAN—State Hy. Dpt., Charles M. Ziegler, comr., 222 Townsend St., Lansing, Zone 13,

Mid-America Engineering Corp., Skokie, Ill. LB $204,861. est. $200,000. bit. conc. binder wid'n. 9.382 mi. US 10 US 31 M-116, F 53-1 C5-R (F 104-3), Mason Co.;

H. C. Shingledecker, Pontiac, Mich. LB $71,363, est. $80,000. bank run grav. base course 1.8 mi. Three Mile Rd. SS 41-36 C5-R (S 639 3), Kent Co.;

A & A Asphalt Paving Co., 1045 Haynes St., Birmingham, Mich. LB $78,878, est. $80,000. b. conc. surf. 1.027 mi. US-10, M 63-6 C5-U, Oakland Co. Bids July 29. CD 7/22.

United Constr. Co., 320 Houseman Bldg., Grand Rapids, Mich. CA. $431,411. Ruddiman Drain, Ruddiman Creek No. 51, 4,411 ft. long, concrete pipe 18 to 84 in. 4 to 30 ft. deep, MUSKEGON, MICH. Muskegon Co., Patrick J. Buckley, drain comr., 953 E. Keating Ave., Muskegon, Mich. Bids July 2. CD 6/26.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Columbus Associated Builders,** 50 E. Broad St., Columbus, O., Owner Builds. $6,500,000, 1,000-unit 2-story frame HOUSING proj. COLUMBUS, O.

▲ **E. I. du Pont de Nemours & Co., Inc.,** duPont Bldg., Wilmington, Del. Own Forces. $1,000,000. PLANT to mfg. "Freon" a fluorinated hydro-carbon compound, EAST CHICAGO, IND.

▲ **George A. Fuller Co.,** 111 Washington St., Chicago, Ill., CA. $37,000,000. 41-story Mid-America Home OFFICE, Grant Park, CHICAGO, ILL. Prudential Insurance Co. of America, 763 Broad St., Newark, N. J. Bids July 15. CD 6/9.

Ralph H. Ladd Constr. Co., 1524 Poag St., Edwardsville, Ill. Owner Builds. $500,000. one hundred 1 story, frame RESIDENCES, on 20 acre tract east of 14 St. between Esther and Lois Aves., WOOD RIVER, ILL.

▲ **Klug & Smith Co.,** 4425 W. Mitchell St., Milwaukee 14, Wis., CA, Est. $1,000,000, 355,000 sq. ft. concrete, steel, brick PLANT addn., CUDAHY, WIS. Ladish Drop Forge Co., 5481 S. Packard Ave., Cudahy, Wis.

Linden-Lerner Constr. Co., 9940 Roselawn St., Detroit, Mich. CA. $659,185. est. $660,000. brick, steel Beverly Elementary SCHOOL, BIRMINGHAM, MICH. City, School Dist., Birmingham, Mich. Bids July 8. CD 6/25.

City, John Rivard, city clk., Oak Park, Mich. rejected bids July 7, Dartmouth-Church Elementary SCHOOL. Job 33-14, First Unit, OAK PARK, MICH. Est. $300,000, CD 6/22.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **North Dakota**—B.A. On Or About 8/25—U. S. Eng., Fort Lincoln, Box 300, Bismarck, relief well channel Garrison Dam and Reservoir Proj. Serial No. CIVENG-32-015-54-11. CD 7/27.

BIDS ASKED—BUILDINGS

Mo., Jefferson City—ARMORIES—B.A. 8/20—Missouri National Guard, c/o adjutant gen. A. D. Sheppard, major gen., State Office Bldg., Jefferson City, national guard armories at Jackson, Independence, Maryville and Mexico. Plans deposit $25.

† **N. D., New Town**—SCHOOLS, etc.—B.A. 8/26—U. S. Eng., Fort Lincoln, Box 300, Bismarck, Fort Berthold Indian Reservation Facilities, schools, office and misc. bldgs. in New Town, the New Townsite relocation for Sanish and Van Hook, and in the Western and Eastern Segments of the Fort Berthold Indian Reservation, Garrison Dam and Reservoir. Serial No. CIVENG-32-015-54-13. CD 7/27, under LB.

▲† **Mo., Overland** (St. Louis 14 P.O.)—RECORDS CENTER—B.A. 9/1—U.S. Eng., 601 Davidson Bldg., Kansas City 8, Mo., 2 story 282x728 ft., rein.-con. masonry military personnel records center, 1 story, 103x236 ft. adjacent bldg. for cafeteria and assembly hall, incl. site grading, sodding, seeding, roads, parking areas, outside utilities. Eng. 23-028-54-11B, $18,000,000. Extended date. Associated Architects & Engineers, Inc., International Office Bldg., 722 Chestnut St., St. Louis, Zone 1, engr.-archt. CD 10/27.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Eugene Luhr & Co.,** Columbia, Ill. CA **$437,132.** enlargement of about 6 mi. earthen levees (approx. 1,874,000 cu. yd. placement by non-hydraulic methods) in Perry Co. levee Dists. 1, 2 and 3, Perry Co., Proj. Items VI-B and VI-C, MISSOURI. U. S. Eng., 420 Locust St., St. Louis 2, Mo. Bids June 18. CD 5/22, under LB.

▲ **Southwestern Bell Telephone Co.,** 1010 Pine St., St. Louis 1, Mo. Own Forces. est. **$1,000,000.** long distance circuits between St. Louis and Flat River, Mo., incl. 7 mi. underground cable south from intersection of Gravois and Loughborough Aves., St. Louis to Mehlville, Mo., central office, 22 mi. of aerial cable to Herculaneum, Mo. and Festus, addnl. long distance facilities to Maxville, Antonio, Imperial, Bismarck, De Soto, Ste. Genevieve, Fredericktown, Flat River and Chester, Ill., MISSOURI.

† **Markham & Brown Co.,** 1961 N. Industrial St., Dallas, Tex. and **Mississippi Valley Eng. & Constr. Co.,** 787 S. Willett St., Memphis 4, Tenn., LB **$316,161.** repair dikes and revetment, Upper Deroin-Upper Cottier Bends, Atchison and Holt Counties, Mo. and Nemaha and Richardson Counties, Neb. Inv. 25-066-54-7. MISSOURI AND NEBRASKA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids July 21. CD 7/10.

L. G. Barcus & Sons Constr. Co., 1430 State St., Kansas City, Kan. LB **$439,900.** est. $350,000. water line from new intake station to water plant 980 ft. 78 in. diameter, NORTH KANSAS CITY, MO. City, City Hall, North Kansas City, Mo. Chas. A. Haskins, Finance Bldg., Kansas City, Mo., engr. Bids July 27. CD 3/24/48.

ARKANSAS—State Hy. Comn., Little Rock,
M. E. Gillioz, Monette, Mo. LB. **$296,727,** Hy. 7 Jasper South, Newton;
Southeast Constr. Co., 127½ Main St., Pine Bluff, Ark. LB. **$322,783.** surf. Monroe East and West, Monroe and Lee Counties. Bids July 29.

Ernest Ward, Benton, Ark. CA. **$132,330.** sewer treating plant, primary treating only, standard clarifiers, ARKADELPHIA, ARK. City, Arkadelphia, Ark. Bids July 24. CD 7/14.

Kansas City Bridge Corp., 928 Broadway, Kansas City, Mo. CA **$530,840.** 3 piers Missouri River, LEAVENWORTH, KAN. Leavenworth Co., and State of Kansas, Leavenworth, Kan. Bids July 28. CD 7/8.

▲† **Peter Kiewit & Son,** 1024 Omaha National Bank Bldg., Omaha, Neb., LB. **$1,154,867,** runways and taxistrips, parking apron, Ardmore Air Force Base, Inv. No. Eng-34-06-53-131, ARDMORE, OKLA. U. S. Eng., Box 61, Tulsa, 2, Okla. Bids July 30. CD 7/8.

Consolidated-Vultee Aircraft Corp., Grants Lane, Fort Worth, Tex. rejected bids July 17, repair asph. paving on parking lots, LB **$305,845.** Project indefinitely postponed. FORT WORTH, TEX. (Correction-status). CD 7/28, under CA.

† **C. H. Leavell,** 1900 Wyoming St., El Paso, Tex., CA. **$590,982,** aircraft maintenance hangar, Inv. No. Eng-29-005-53-144, LUBBOCK, TEX. U. S. Eng., P.O. Box 1528, Albuquerque, N. M. Bids July 10. CD 7/21, under LB.

McMillon Constr. Co., 3050 S. Huron St., Denver, Colo. CA **$169,722.** est. $212,900. Street paving Dist. No. 191 concrete curb, gutter, sidewalk, grav. base, asph. conc. paving, necessary incidental imprvs., DENVER, COLO. City & Denver Co., City & County Bldg., Denver, Colo. Bids June 2, awarded June 9. CD 3/16.

BUILDINGS

LOW BIDS AND CONTRACTS

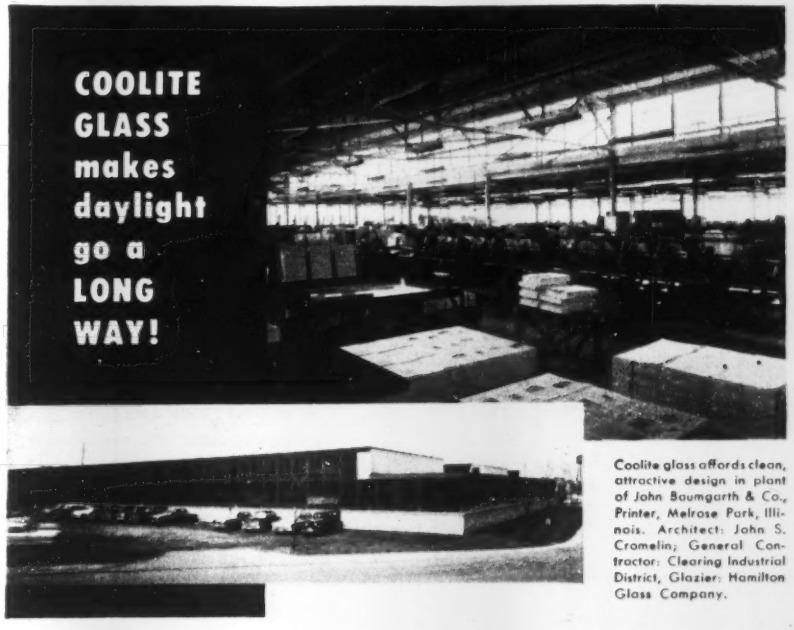
† **Ring Constr. Co. & O. E. Madsen,** 721 Metropolitan Bldg., Minneapolis, Minn. CA **$428,069.** rehabilitation of BUILDING 503, Twin Cities Arsenal near New Brighton, MINNEAPOLIS, MINN. U. S. Eng., 1709 Jackson St., Omaha 2, Neb. Bids July 3. CD 5/14.

▲ **Hagstrom Constr. Co.,** 1567 Selby Ave., St. Paul, Minn. LB **$1,027,000.** general contract VETERANS' SERVICE BLDG., State Capitol Grounds, ST. PAUL, MINN. State Veterans Service Bldg. Comn., W. H. Fallon, 1746 Court House, St. Paul, Minn. Bids July 29. CD 7/14.

J. Emil Anderson & Son, 1811 W. Balmoral St., Chicago, Ill. CA **$425,000.** WAREHOUSE at branch plant, CLINTON, IA. E. I. duPont de Nemours & Co., du Pont Bldg., Wilmington, Del.

Edward J. Cassilly Jr. and **William S. Cassilly,** 534 S. Elm St., St. Louis 19, Mo. CA est. **$500,000.** 75 addnl. frame RESIDENCES, attached GARAGES, concrete fdns., 7600 MacKenzie Rd., AFTON (ST. LOUIS 23 P.O.), MO. William S. Cassilly Inc., 534 S. Elm St., St. Louis 19, Mo.

▲ † **G. L. Tarlton Contg. Co.,** 5505 Dale Ave., St. Louis 10, Mo. LB **$4,800,000.** expansion of Navy facility at McDonnell Aircraft Corp. PLANT to consist of 503x804 ft. mfg. bldg., 62x63 ft. fuel test laboratory, 52x72 ft. oil storage bldg., 20x45 ft. fire protection pump house, storage tank, pedestrian underpass, for Bureau Yards & Docks, Navy Dpt., A. P. Wilks, Robertson, Mo., ROBERTSON (ST. LOUIS 21, P. O.), MO. McDonnell Aircraft Corp.,



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PNEUMATICALLY PLACED CONCRETE
DENSE · DURABLE · HIGH STRENGTH

for

Restoring Disintegrated Concrete
Dam, Dock and Bridge Repairs
Steel Encasement and Fireproofing
Sewer, Water Pipe and Penstock Linings
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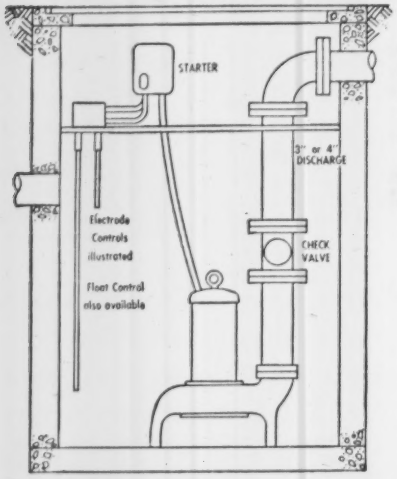
weil SUBMERSIBLE

NON-CLOG SCREENLESS SEWAGE EJECTOR



Pumps ALL Sewage

From Lift Stations — From Disposals — From Laundry Trays — All Household Sewage — All Industrial Sewage — even RAGS.

The Submersible handles anything that will pass through sewage lines.

Designed

- **To operate UNDERWATER**
- **for BELOW floor level installation**
- **for installation in LIMITED SPACE**
- **for DUST-PROOF operation**

Capacities: 35 to 300 G.P.M. Heads to 45 feet

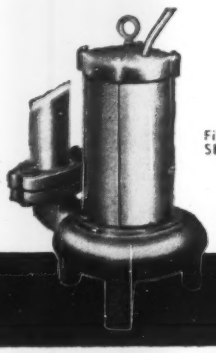


Fig. SE 860

Underground Lift Station with Submersible Pump in wet pit. Requires no pump house to mar the landscape. Duplex units furnished with alternators.

For Heavy Duty Installation—4" discharge—½ to 3 HP. See Bulletin SE 860. Max. dimensions: Dia. 23", Hgt. 28".

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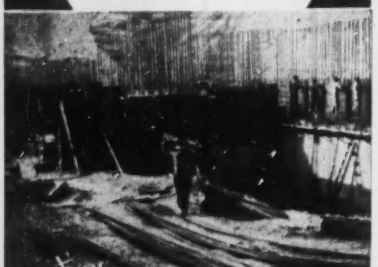
1528 NORTH FREMONT ST., CHICAGO 22

Reduce costs and

INCREASE PROFITS

by renting these metal forms for concrete



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metal forms for concrete construction

SPEED BULK MATERIAL HANDLING

SCOOT-CRETE

BUILT FOR THE TOUGH JOBS!

Scoot-Crete Model N-52
Pay load, 3,000 lbs.

Scoot-Crete's heavy-duty, truck transmission stands up under the worst operating conditions; delivers maximum horsepower from the Wisconsin AEN air-cooled engine to the heavy-duty, high-traction 7:50x10, 6-ply U. S. Royal tires. Scoot-Crete scoots 3,000 lb. loads up 25% grades, in plants and at construction sites, has caster steering — turns in its own 90" over-all length. Dump box body interchangeable with flat rack in a few minutes. Speeds, 1 to 15 mph. 14, 16, 20 cu. ft. capacities. Today, write for specifications and performance facts.

GETMAN BROTHERS

Manufacturing Division

South Haven, Michigan

Lambert Field, St. Louis, Mo. Sverdrup & Parcel, Syndicate Trust Bldg., 917 Olive St., St. Louis 1, Mo., engrs. Bids July 28.

Merle-Jung Constr. Co., 5555 West Park, St. Louis, Mo. CA raising 100 ton roof of 134x202 ft. bldg. to provide 100,000 cu. ft. addnl. WAREHOUSE space, 4421 Ridgewood Ave., ST. LOUIS, MO. Ridgewood Corp., Railway Exchange Bldg., St. Louis, Mo. Brightman Distribution Co., (Admiral), 4421 Ridgewood Ave., St. Louis 16, Mo., lessee.

Murch-Jarvis Co., Inc., 718 Locust St., St. Louis 1, Mo. CA 1 story, 100x100 ft., concrete block automobile repair SHOP in rear of 4435 Duncan Ave., ST. LOUIS, MO. City Products Corp., 3638 Olive St., St. Louis 8, Mo.

Charles F. Vatteroott & Co., 10259 St. Charles Rock Rd., St. Ann 21, Mo. Owner Builds. est. $2,500,000. 348 brick or frame RESIDENCES Second addn. to San Fernando Hills at Florissant Rd. and U.S. No. 66 north of Ferguson, ST. LOUIS COUNTY, MO.

▲ **P. Kretzner & Son**, 1220 N. Glenstone St., Springfield, Mo. CA Est. $1,500,000. 300x1,000 ft., concrete block STORAGE WAREHOUSE addn. to mfg. plant, SPRINGFIELD, MO. Lily-Tulip Cup Corp., 1100 N. Glenstone St., Springfield, Mo.

▲ **M-K Development Co.**, Warrensburg, Mo. CA est. $1,000,000. 114 HOUSES on 120 acre tract, WARRENSBURG, MO. J. Kenneth Marr and Clarence C. Kemp, Warrensburg, Mo.

Warren Petroleum Corp., Norsworthy, Tex., Own Forces, $685,500. petroleum STORAGE, portion of tank farm, NORSWORTHY, TEX. CD 10/20.

Christy & Baskett, American Hospital & Life Bldg., San Antonio, Tex., LB, $401,880. 150-man DORMITORY, SAN ANTONIO, TEX. Trinity University, Stadium Dr., San Antonio, Tex. Bids July 28. CD 7/10.

▲ **M. W. Kellogg Co.**, 225 Broadway, New York, N. Y. CA Approx. $11,250,000. catalytic REFORMING UNIT, at refinery, TEXAS CITY, TEX. Pan-American Refining Corp., Texas City, Tex. CD 4/27.

Barbour Constr. Co., 2700 N. Ave., Grand Junction, Colo. LB $312,636. est. $300,000. 1 story, 128x140 ft., brick DINING HALL, GRAND JUNCTION, COLO. State Home & Training School for Mental Defectives, Grand Junction, Colo. Alfred Watts Grant, 1669 Broadway, Denver, Colo., engr.-archt. Bids July 20.

Dan Brunetta Constr. Co., Box 68, Gallup, N. M., CA, $426,000, CATHEDRAL, GALLUP, N. M. Cathedral of the Sacred Heart, Gallup, N. M. Bids July 14.

FAR WEST

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **General Constr. Co.**, 3840 Iowa Ave., Seattle, Wash. CA. $4,157,000. 4,000 ton concrete floating Drydock, Puget Sound Naval Shipyard, NOY 76732. BREMERTON, WASH. Dpt. Navy, Bureau Yards & Docks Annex, Arlington, Va. CD 4/10/52.

▲† **Peter Kiewit Sons Co.**, 442 Post St., San Francisco, Calif. and **Parish Bros.**, Benecia Calif., LB $7,628,991, main Monticello Dam, Solono Proj.; Yolo, Solono and Napa Counties, Spec. DC 3970. CALIFORNIA. Bureau Reclamation, City Council Chambers, City Hall, Winters, Calif. Bids July 30. CD 7/10.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles.

Griffith Co., 1060 S. Broadway, Los Angeles, Calif. CA. $3,060,396. grading, surf., 7 bridges on Golden State Freeway, Los Angeles Co. CD 7/21, under LB.

▲ **George A. Fuller Co.**, 3100 W. 8 St., Los Angeles, Calif., CA, $1,134,681, shop and hangar bldg. at Palmdale Airport, PALMDALE, CALIF. North American Aviation, Inc., 5601 W. Imperial Hy., Inglewood, Calif. Bids June 29. CD 6/3.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Carson Park Builders**, Box 8086, Long Beach, Calif., CA, $1,297,700, 159 frame, stucco HOUSES, Ballin, Baren, Steneky, Volk, Lee Sts., NORTH LONG BEACH, CALIF. Carson Park Mutual Homes No. 13, Box 8086, Long Beach, Calif. Paul J. Duncan, 13310 Moorpark St., Sherman Oaks, Calif., archt.

▲ **Cainspray, Inc.**, 12017 S. Paramount Blvd., Downey, Calif. Owner Builds. $2,380,000, 238 frame DWELLINGS, 21 St., Alona and Elm Sts. in tract 1724, SANTA CRUZ, CALIF.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

▲ **New Brunswick**—B.A. 8/20—Maritime Marshlands Rehabilitation Admin., Amherst, 150,000 cu. yd. rock excav., 10,000 cu. yd. concrete, 250,000 cu. yd. rock fill near Harvey Bank (Aboideau). $1 500,000. CD 3/3/48, under N. B., Fredericton.

SOON LETS CONTRACT—BUILDINGS

Ont., Brantford—PLANT—B.A. 8/11—Fibre Products of Canada Ltd., 1700 Langlois St., Windsor, 1 story, 275x290 ft. steel plant, 20 ft. high, 2 story office, $500,000, Murray Sklar, 165 Spadina Ave., Toronto, archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Ontario**—Dpt. Hys., Parliament Bldg., Toronto,

Scott-Jackson Constr. Ltd., 501 Evans Ave., Toronto, Ont. CA. est. $1,000,000. dual hys. near Kingston from Trent River 5.2 mi. grading, culverts, Kingston;

(Continued on page 80)

The manufacturers of Waterplug, Thoroseal, Quickseal

Introduce 3 NEW PRODUCTS

RED STAR

THOROLOK

Intended for asbestos shingles, on roof or exterior walls of your home or other building. THOROLOK is prepared in six beautiful pastel colors. Ask for Color Card 32-C.

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Prepared especially for basement floors which need protection and corrects unsightly appearance. Furnished in six beautiful colors. Ask for Color Card 32-C.

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THOROCLEAR

Clear, water-repellent material for porous brick, stone, concrete, stucco, asbestos siding and shingles, interior plaster and masonry surfaces, where texture and color are to be retained.

NEW PROTECTION

With addition of three newly-tested products to The THORO System, any type surface such as steel, wood, asbestos siding and shingles and every type masonry and stucco can be protected from excessive weathering, caused by rain and changing temperatures.

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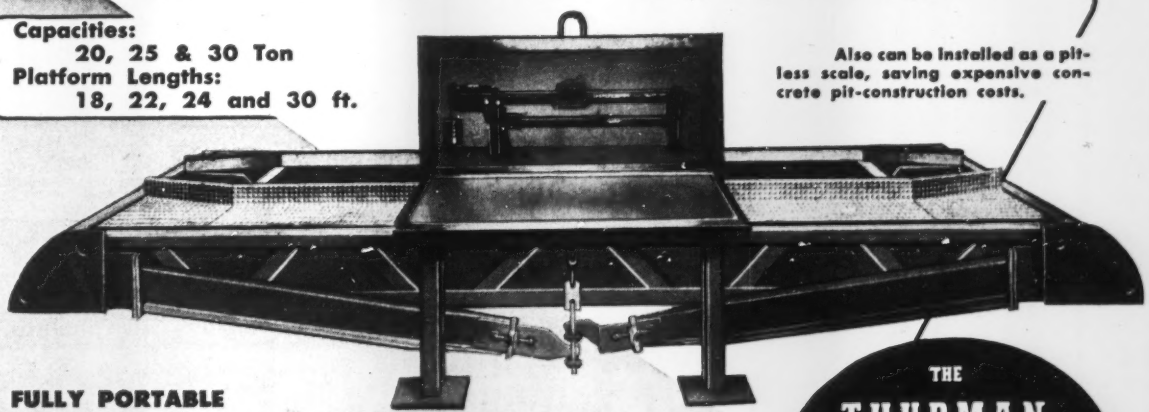
NEW EAGLE, PENNSYLVANIA

MOVE IT TO THE JOB

Capacities:
20, 25 & 30 Ton
Platform Lengths:
18, 22, 24 and 30 ft.

Also can be installed as a pitless scale, saving expensive concrete pit-construction costs.



FULLY PORTABLE

This scale can be moved from job to job as a unit merely by removing the six bolts which hold the side levers in place. The assembled scale can then be lifted and loaded on a truck for transporting. Once positioned, it can be ready for use in minutes.

ACCURATE and PRECISE

Perfectly balanced for lifetime accuracy. Wide steel bases, at both ends, support scale, therefore require no concrete footings.

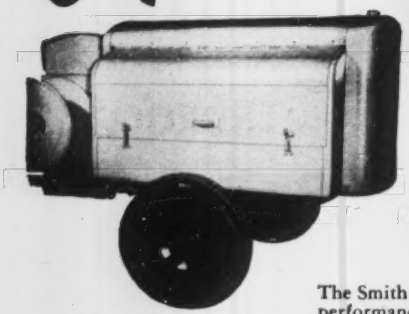
Easy-to-read weighbeam is chrome-plated. Other vital parts are electro-plated against corrosion.

THE
THURMAN PORTABLE TRUCK SCALE

Est. 1918

THURMAN MACHINE CO. SCALE DIVISION
156 North Fifth Street
Columbus, Ohio
Dept. B

Compressed Air to handle most jobs For Less!



Model 105-P. Has self-starter, battery ignition, voltage regulator, large radiator capacity with thermostat for quick warmup.

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MODEL 105-P

AIR COMPRESSOR

The Smith 105-P delivers smooth power, gives long performance, and will handle most of your compressor work, for less! Powered with Chrysler Ind. 15 Industrial Engine with 377 cu. in. displacement. Delivers 105 cu. ft. per minute. Has sodium cooled valves and Stellite valve seats in engine. Stainless steel disc type valves and Manganese Bronze seats in compressor. Heavy duty with light weight (2100 lbs.). *Write for literature and prices.*

Also the SMITH 70-P AIR COMPRESSOR

GORDON SMITH & CO. 430 COLLEGE STREET BOWLING GREEN, KY.

McKIERNAN-TERRY

Ruggedly-Built PILE EXTRACTORS

Provide exceptional pulling power, with the sharp energy of blow needed to vibrate and loosen stubbornly set piling. These double-acting extractors come in two standard models—heavy and extra heavy. Standardized line also contains 11 double-acting hammers and 5 single-acting hammers. Write for bulletin.

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F. W. DODGE CORPORATION

(Continued from page 78)

Mannix Ltd., 100 Adelaide St. W., Toronto, Ont. CA. est. $900,000. hy. 69 north of French River 7.2 mi. grading, culverts, Sudbury;
Tomlinson Bros. Ltd., 775 Queensway, Toronto, Ont. CA. $1,000,000. 8.5 mi. Ontario Hy. 69 north of French River, grading, culverts, Sudbury;
Standard Paving Ltd., Harbor Comm. Bldg., Toronto, Ont. CA. $200,000. resurf. 5.5 mi. dual lane Elizabeth Way near St. Catherines, St. Catherines. Grand total $3,100,000. Awarded July 17. CD 4/27/44.

BUILDINGS

LOW BIDS AND CONTRACTS

Christenson & MacDonald Ltd., 612 Tegler Bldg., Edmonton, Alta. CA. $533,842. concrete, steel, brick WAREHOUSE OFFICE, EDMONTON, ALTA. Metals Ltd., Edmonton, Alta.

▲ Baert Constr. Co. Ltd., 314 Dawson Rd., St. Boniface, Man., CA, Est. $2,000,000 concrete, steel, brick BAKERY addn., Myrtle St., WINNIPEG, MAN. Christie Brown Co. Ltd., Notre Dame St., Winnipeg, Man. CD 5/8.

▲ McDonald Constr. Co. Ltd., 76 Sullivan St., Halifax, N. S. CA, $1,250,000, 1 and 3 story mail order WAREHOUSE addns. HALIFAX, N. S. Simpson-Sears Ltd., 176 Yonge St., Toronto, Ont. Awarded July 28. CD 2/11.

▲ Louis Donolo, Inc., 8320 St. Lawrence Blvd., Montreal, Que. CA. $1,500,000, 15 story, 103x184 ft., concrete, steel, brick OFFICE, Guy St., MONTREAL, QUE. Guy Towers, Inc., 4151 W. Sherbrooke St., Montreal, Que. Bids July 20. CD 7/9.

▲ Smith Bros. & Wilson Ltd., Dominion Bank Bldg., Regina, Sask. CA. $3,188,077. 5 story, 175x200 ft. POST OFFICE and government bldg., REGINA, SASK. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. CD 7/21, under LB.

ALASKA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

L. B. McKinney, Fairbanks, Alaska, CA. $795,382. imprv. water sys., FAIRBANKS, ALASKA. City, City Hall, Fairbanks, Alaska. Bids June 19. CD 7/1, under LB.

AMERICANS ABROAD

BIDS ASKED—HEAVY CONSTRUCTION

Liberia—B.A. 9/1—At office The Secy. P. Wks. and Utilities, Dpt. P. Wks. and Utilities, Monrovia, const. 23.375 mi. the Liberia, Monrovia-Kakata Proj. 1-B, Montserrado Co., R.L. Plans deposit $50. adv. ENR 8/13.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

India, Bombay—B.A. 9/30—Republic of India, Ministry of Defence, c/o General Williams, New Delhi, development of naval dockyards, dredging, reclamation, wharves, etc. S. W. Ale & Gibb & Partners, Queen Lodge, Westminster, England, engrs.

Proposed Projects

WATER SUPPLY

▲ Calif., National City—City, City Hall, defeated $11,000,000 bonds, water works system. CD 6/23.

O., Medina—City, WW imprvs. incl. filtration plant, $215,000; overhauling narrow water mains and installing 8 in. pipe, $183,000; 500,000 gal. elevated storage tank, $90,000. Shaffer, Parrett & Assoc., Mansfield, consult. engrs.

Tex., Conroe—City, Conroe, water storage, $100,000, water mains extens. and distr. $200,000 for immediate constr.; future WW sys. expans. and imprvs. $300,000.

SEWERS, WASTE DISPOSAL

Ill., Chicago—Cook Co., County Bldg., main drain, Calumet Expressway through Thornton, Glenwood and Lansing near Glenwood. $800,000.

Ind., Madison—Bd. P. Wks., Mayor Chas. Vaught, chn., City Hall, sewage treatment plant, North Madison, $350,000. J. W. Wilson, K. of P. Bldg., Indianapolis, Zone 4, and Elmer Brown, Hanover, assoc. engrs. CD 9/24/45.

Ky., Shively—City, sewer net work and sewage disposal plant. $900,000. J. Stephen Watkins, 251 E. High St., Lexington and Robert E. Martin, Hoffman Bldg., Louisville, consult. engrs.

▲ Md., Towson—Baltimore Co. Comrs., Court House, Roland Run-Jones Falls Trunk Sewer, Roland Run-Jones Falls Sect. $1,400,000. Charles B. Wheeler, c/o owner, ch. engr.

▲ Mo., Columbia—City, sewers, sewage plant, $1,000,000, Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs. CD 3/9/51.

Mo., Lee's Summit—City, sewer extens. $487,000. B. L. Oliver & Co., 1805 Grand St., Kansas City, consult. engrs. Bids June 24 rejected LB. $149,700, treatment plant; LB. $220,354, sewer lines. CD 6/24, under LB.

▲ **O., Mansfield—City,** sewage disposal expans. $12,000,000. Floyd Browne, Marion, consult. engr. CD 11/11/48.

▲ **O., Mansfield—City,** bond election November 3, sewers and sewage disposal plant addn. $2,300,000. CD 7/28.

▲ **Pa., Erie—City** and Lawrence Twp. Comrs., Erie, sewage plant, $6,000,000; seven relief sewers, $2,309,000. Consoer, Townsend & Assoc., Clark Bldg., Pittsburgh, consult. engrs. CD 3/10.

Tex., Conroe—City, Conroe, sewage disposal unit, $300,000, sanitary sewer lines $250,000 for immediate constr.; future sanitary and storm sewer sys. imprvs. $350,000.

▲ **Va., Fairfax—Fairfax** Co. Bd. Suprvs., Court House, approx. 125 mi. pipe lines, etc. for county-wide sewer sys. $17,500,000. Massey Engineers, Fairfax and R. Stuart Royer & Assoc., Virginia Bldg., Richmond, consult. engrs.

▲ **Wis., Madison—Madison** Metropolitan Sewerage Dist., 110 E. Main St., sewerage diversion. $3,977,600. Greeley & Hansen, 220 S. State St., Chicago, Ill., and Mead & Hunt, Inc., 550 State St., Madison, consult. engrs.-archts.

BRIDGES

▲ **CALIFORNIA—Division** of Bay Toll Crossings, 2054 University Ave., Berkeley, **Contra Costa and Marin Counties—**electrical work on **Richmond-San Rafael Bridge, $1,000,000.** CD 9/29/52.

STREETS AND ROADS

▲ **Ill., Chicago—City, City Hall, resurf.** lower level street sys., Wacker Dr., Water St. and Michigan Ave., $1,600,000; resurf. 7 streets in Loop Dist., Adams, Clark, LaSalle, Madison, Monroe, Randolph and Washington Sts. $700,000. CD 4/25/45.

EARTHWORK, WATERWAYS

Tex., Edinburg—Hidalgo Co., Edinburg, voted bonds July 25, flood control work. $250,000. CD 7/1.

▲† **Virginia—U.** S. Eng., Foot of Front St., Norfolk, $700,000 appropriation initial constr. of disposal area (dumping grounds for dredged materials), at Craney Island. Total est. $8,000,000.

▲ **Wash., Seattle—City,** County-City Bldg., Seattle, Zone 4, hi dam at Gorge on Skagit River to increase power output by 42,000 kw. E. R. Hoffman, City Light Supt.

AIRPORTS

▲ **O., Springfield—AIRPORT—Air** National Guard of Ohio, 530 Buckingham St., ANG jet plane base, lengthening 5,500 ft. runway by 1,500 ft. at Springfield Municipal Airport. $2,000,000.

▲† **Tex., San Antonio—AEROMEDICAL CENTER—U.** S. Eng., 606 Santa Fe Bldg., Galveston, plans by Texas Architects & Engineer Associates, archt.-engrs., 305 W. 11 St., Austin, aeromedical center, Brooks Air Force Base. $5,000,000. CD 4/30/52.

LATIN AMERICA

▲ **Mexico, Mexico City—HOSPITALS—Mexican** Social Insurance Institute (Institute Mexicano de Seguor Social), P. de la Reforma, 410, Mexico City, two 400-bed hospitals. $1,000,000 each.

Mexico, Papigochic—Mexican Govt., Sria de Recursos Hidaulicos, P. de la Reforma 69, Mexico City, plans irrigation dam, $920,000-$1,380,000. Antonio Benazzine, and Eduardo Chavez, c/o owner, engrs.

PUBLIC BUILDINGS

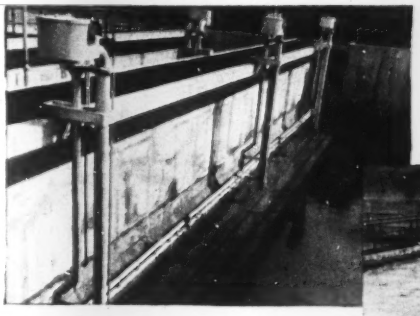
▲ **Calif., Los Angeles—SCHOOLS—Los** Angeles Bd. Educ., 1425 S. San Pedro St., plans by Davis & Ferguson, 14423 Sylvan St., Van Nuys, San Jose Street School, $360,000; plans by Leslie E. Arthur, 323 N. Beverly Dr., Beverly Hills, Kentner Avenue School in Brentwood area, $360,000; plans by Ayres & Fiegl, 4253 Coldwater Canyon Ave., North Hollywood, Fullbright Avenue School on Oso St., $350,000; plans by Murray Erick & Assoc., 5657 Wilshire Blvd., Los Angeles, strengthen and modernize Hollywood High School auditorium, $550,000; strengthen and modernize Garfield High School auditorium, $600,000. J. D. Middleton, 6311 N. Figueroa St., Los Angeles, consult. engr. CD 6/13/52.

Calif., Monrovia—SCHOOLS—Monrovia City School District, 122 Linwood Ave., $500,000 bond election Oct. 29. Mayflower, Clifton and Plymouth Schools. CD 10/27/49.

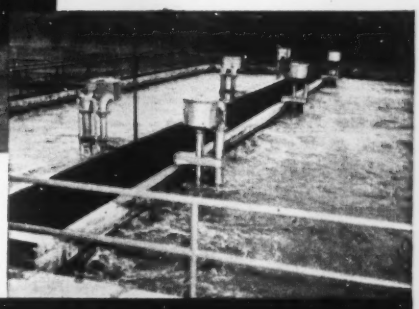
Calif., Palmdale—HOSPITAL—Antelope Valley Hospital District, Palmdale, $300,000 bond election Aug. 18, hospital. $800,000. Merrie W. Baird, Bank of America Bldg., Glendale, archt. CD 1/20.

▲ **Fla., Gainesville—SCHOOL AND LABORATORY—State** Bd. Control, Educ. Bldg., Florida State University, Tallahassee, plans by W. Kenyon Drake, 218 N. Church St., Jacksonville, agriculture school, $1,850,000; plans by Guy C. Fulton, Gainesville, engineering laboratory, $455,000, University of Florida. CD 7/20.

Fla., Gainesville—FARM COLONY—State Improvement Comn., Caldwell Bldg., Tallahassee, plans by Reynolds,



DIFFUSAIR installation at Kirkwood, Mo. Impingement nozzles and bowls are on headers at lower left side of tank.



DIFFUSAIR at Kirkwood, Mo. in operation showing effective "spiral flow" agitation and aeration of tank liquor.

impingement aerator **DIFFUSAIR**

FOR

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WASTE AND

WATER TREATMENT

PRE-AERATION...

ACTIVATED SLUDGE...

CARBONATION

The Impingement Aerator is a unit developed to accomplish more effectively and economically the diffusion of air as small bubbles to agitate and oxygenate aeration tank liquors.

The principle involved is the combining of a low velocity jet of tank liquor and large air bubbles within an open bowl-like impinger. The cavitation effect thus produced divides the air into smaller bubbles than those diffused from a No. 30 permeability porous tube. The amount and pressure of the impingement water is very low when compared with the progressive back pressuring of the blower that persists when other types of air diffusers are employed.

The impingement liquor is derived directly from the aeration tank mixed liquor, and is lifted with a simple air-lift unit from which 1/3 of the fine air is re-entrained and utilized for oxygenation.

The air is released along headers through 3/16 inch orifices in the impinger units and no air clogging is possible. No filtering of the compressed air supply is required since there are no fine diffusion pores to become clogged.

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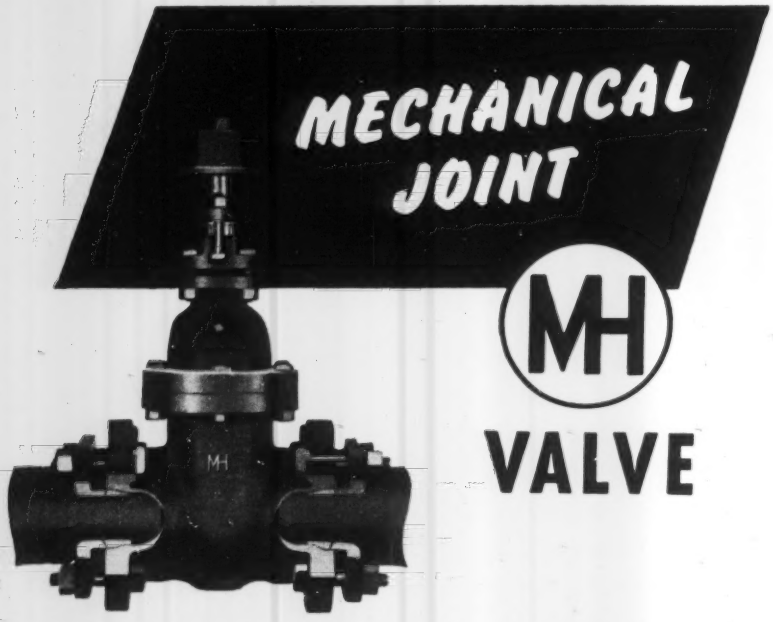

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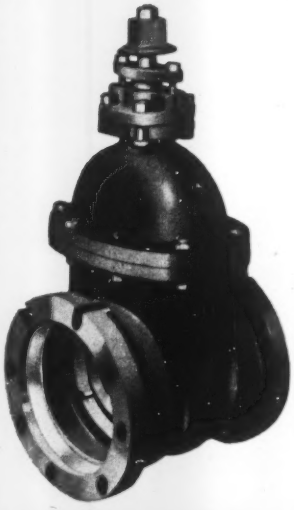

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Smith & Hills, P. O. Box 4817, Jacksonville, white ward bldg., $505,000; plans by Griffin & Gomon, Daytona Beach, Fla., nursery, 125,000; electric sys., etc., imprvs., 139,500; sewage disposal plant, $149,500, Florida Farm Colony. Reynolds, Smith & Hills, P. O. Box 4817, Jacksonville, consult, engrs.

▲ **Fla., Tallahassee**—CLASSROOM, AGRICULTURE AND HOME ECONOMICS BLDG.—State Bd. Control, Educ. Bldg., Florida State University, Tallahassee, plans by Bruce, Smith & Jack McCandless, 2915 First Ave. N., St. Petersburg, classroom bldg., $1,000,000; agriculture and home economics bldg., $1,000,000; plans by L. Alex Hatton, 815 E. Colonia Dr., Orlando, demonstration school, $400,000, Florida A. & M. College of Negroes. CD 7/20.

▲ **Fla., Tallahassee**—UNIVERSITY BLDGS.—State Bd. Control, Educ. Bldg., Florida State University, Tallahassee, plans by Stewart & Skinner, 223 SE First St., Miami, library, $2,100,000; plans by James Gamble Rogers, 145 Lincoln Ave., Winter Rock, classroom bldg., $750,000; plans by Reynolds, Smith & Hills P. O. Box 4817, Jacksonville, gymnasium, $1,000,000; plans by Yonge, Look & Morrison, 611 Blount Bldg., Pensacola, home economics bldg., $850,000, Florida State University. CD 7/20.

▲ **Fla., Tallahassee**—OFFICE—State Improvement Comn., Caldwell Bldg., plans by Ernest J. Stidolph, P. O. Box 93, Apalachicola, state office, $2,500,000. CD 8/15/52.

▲ **Idaho, Wallace**—SCHOOL—School District 391, Wallace, bond election Aug. 19, senior high school, $1,000,000; junior high school,, $500,000.

▲ **Ind., Indianapolis**—STATE OFFICE—State of Indiana, State Office Bldg. Commission, State House, Indianapolis, Zone 4, 15 to 16 story, state office bldg., $15,000,000.

Ind., Marion—SCHOOLS—Grant Co., 2 rural high schools. $600,000.

Kan., Fort Scott—SCHOOL—Bd. Educ., School Dist. 55, Raymond C. Freuch, pres., plans by Williamson, Loebsack & Assoc., 1243 Topeka Blvd., Topeka, junior high school. $650,000.

Kan., Lawrence—DORMITORY—State Bd. Regents, Topeka, plans by John Brown, c/o owner, dormitory at University of Kansas. $825,000.

▲ **Mass., Stoneham**—HIGH SCHOOL—Town, Joel Whitemore, Chmn. Bldg. Comm. Central St., plans by Howard L. Rich and Herman F. Tucker, 45 Newbury St., Boston, high school, Central St. $1,500,000. CD 4/18/51.

Mass., Worcester—BOILER HOUSE—State, Dpt. Mental Health, 15 Ashburton Pl., Boston, plans by M. A. Dyer Co., 24 School St., Boston, tunnels and boiler house, State Hospital, M 209-Contr. 3, $500,000, Hayden Harding & Buchanan, 810 Park Square Bldg., Boston, mech. engrs., Charles L. Thompson, 135 Clarendon St., Boston, sanitary engr., G. Nelson Perry & Co., Inc., 36 Bromfield St., Boston, struct. engr., Porter W. Dorr, 101 Eliot Ave., Newton, landscape archt. CD 11/13/45.

▲ **Mich., Mount Pleasant**—CUSTODIAL BLDG.—State, A. N. Langius, dir., State Bldg. Dpt., brick, steel, concrete custodial bldg. $1,700,000.

▲ **Mich., Pontiac**—HOSPITAL—State, A. N. Langius, dir., State Bldg. Dpt., Lansing, mental hospital for disturbed patients, Pontiac State Hospital. $2,000,000.

Miss., Columbia—PLANT—Bd. Suprvs., Marion Co., plant for New Orleans Furniture Mfg. Co., $550,000.

▲ **Mo., St. Louis**—SCHOOLS—Bd. Educ., V. Harry Rhodes, Comr., school bldgs., 911 Locust St., Zone 1, 2 story, brick, concrete elementary school 1100 block North Euclid Ave. replacement for Washington School, $900,000; elementary school 1100 block Hebert St. replacement for Ames School, $1,250,000. CD 6/11/51.

▲ **O., Akron**—HIGH SCHOOL—Bd. Educ., 70 N. Broadway, high school on South Side on Lane Field, Wooster Ave. $1,500,000. CD 11/16/50.

▲ **O., Massillon**—SCHOOLS—Bd. Educ., Massillon, $4,125,000 bond election November 3, three new schools, auditorium to high school, vocational bldg. for high school, combination gymnasium-auditoriums, for grade schools. CD 11/25/49.

O., Tiffin—SCHOOL—Bd. Educ., Tiffin, bond election November 3, grade school. $550,000.

O., Warren—HOSPITAL—Trumbull Co. Comrs. Court House, $800,000 bond election November 3. 54-bed Hospital Addn. to Trumbull County TB Hospital. $800,000. CD 6/18.

▲ **Tex., Arlington**—SCHOOLS—Arlington Independent School Dist., Arlington, bond election August 8, No. 1, elementary school, $400,000; No.2, elementary school, $425,000; elementary school addn. $325,000; new high school, some remodeling existing high school, $475,000; general school remodeling and repairing, $500,000; conversion existing school into Junior High School, $375,000. CD 5/26.

▲ **Tex., Houston**—HIGH SCHOOL, etc.—Houston Independent School Dist., 1600 Washington St., Senior High School, Irvington Blvd. and Tidwell Rd., $2,558,250; Junior High School, Yellowstone and Scott Sts., $2,070,900; Senior High School, Rice and Maple Sts., $2,440,500. CD 2/20.

▲ **Va., Norfolk**—HIGH SCHOOL—Norfolk County School Bd., 148 Granby St., plans by Alfred M. Lublin, 931 W. 21 St., Norfolk, Deep Creek High School, Deep Creek. $1,000,000. John B. McGaughy & Assoc., 21st and Llewellyn St., consult. engrs.

Wis., Hartford—SCHOOL—Bd. of Educ., Hartford, bond election Aug. 7, grade school. $500,000. R. N. Le Vee & Assocs., 111 E. South River St., Appleton, archts.

▲ **Wis., Rice Lake**—SCHOOL—Bd. Educ., voted $1,250,000 bonds July 14, high school, Foelier, Schober,

Continued on page 84

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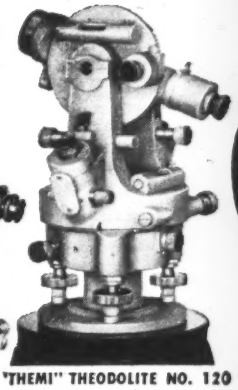

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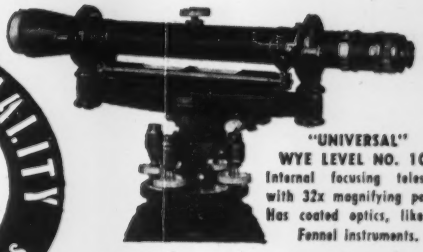

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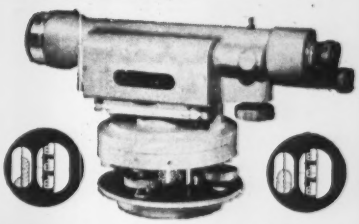

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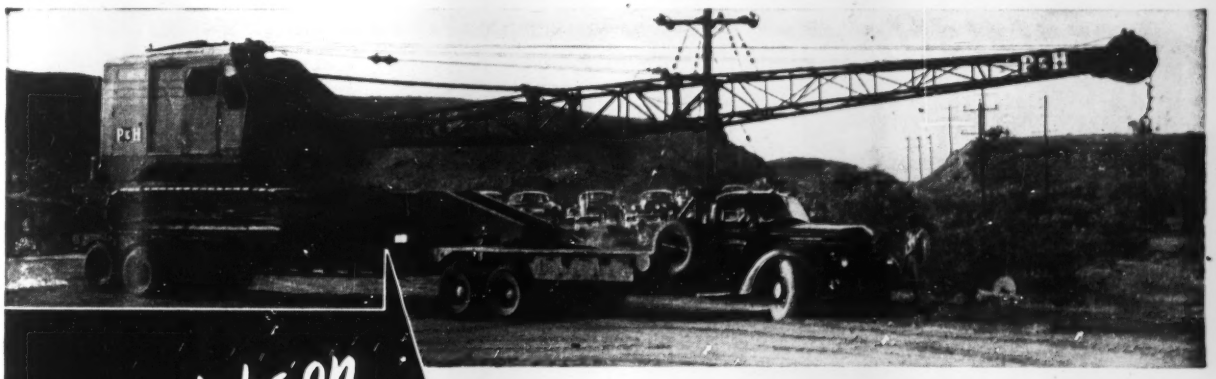

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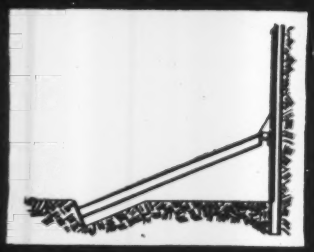

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(Continued from page 82)

Berners, Safford & Jahn, 310 Pine St., Green Bay, archts. CD 1/27/53.

▲ **B. C., Vancouver**—SCHOOL—Vancouver School Bd., 1595 W. 10 Ave., plans by E. D. King, 1595 W. 10 Ave., rein.-con. high school, Marpole area. $1,500,000. CD 1/15/47.

▲ **Ont., Toronto**—HOUSING—City, City Hall, Toronto, plans by J. E. Hoare Jr., 481 Eglinton Ave., W., Toronto, housing development incl. 20 six story apartment blocks, with 960 units, for Regent Park South, adjoining low-cost housing development Regent Park North. $14,000,000. CD 7/31/47.

COMMERCIAL BUILDINGS

Ala., Gadsden—HOSPITAL—Baptist Memorial Hospital, Gadsden, hospital addn., $500,000.

▲ **Calif., Bakersfield**—HOSPITAL—Mercy Hospital 2215 Truxton Ave., plans by Frank A. Georgeson 355 Stockton St., San Francisco, 4 story 60-bed rein.-con. hospital, $1,250,000.

▲ **Calif., Los Angeles**—DWELLINGS—Araco Inc., c/o Edward H. Fickett, archt., 5657 Wilshire Blvd., 345 frame, stucco dwellings in San Fernando Valley, $2,000,000.

Fla., Miami—HOTEL—Parkleigh House Corp., 1050 Hollywood Blvd., plans by Martin M. Wohl, 1050 Hollywood Blvd., Hollywood, hotel. $750,000.

▲ **Ill., Chicago**—APARTMENTS—Illinois Institute of Technology, 3300 S. Federal St., plans by Pace Associates, 53 W. Jackson St., Zone 4 and Ludwig Mies VanderRohe, 200 E. Pearson St., 2 apartment bldgs., on campus, $2,280,000. CD 12/1/47.

Ill., Chicago—OFFICE—Lions International, 332 S. Michigan Ave., Chicago, Zone 4, plans by Mielke & Smith, 53 W. Jackson St., Chicago, Zone 4, 6 story, office, 201 N. Michigan Ave. $750,000.

▲ **Md., Baltimore**—OFFICE—Commercial Credit Co., First Natl. Bank Bldg., office at 309-311, and 313 N. Charles St. and Corner of Saratoga and St. Paul St. $8,000,000.

▲ **Md., Baltimore**—APARTMENT—John K. Ruff, 100 W. 22 St., Zone 18, 14 story apartment incl. 133 living units, part of bsmnt. and ground floor used as garage, 604 Cathedral St., $1,500,000.

▲ **Md., Baltimore**—HOUSES—Uplands, Inc., 4625 Edmonson Ave., plans by Hal A. Miller, 2118 Maryland Ave., 70 one-story 52x38x19 ft., masonry frame houses, $1,106,000.

Md., Towson—HOME—Archdiocese of Baltimore, Mulberry and Charles Sts., Baltimore, Zone 1, plans by Edw. H. Glidden, 412 Equitable Bldg., Baltimore, 3 story, brick, stone, concrete, steel children's home incl. school, recreation, playground, facilities, $800,000, Van Rensselaer Saxe, 1701 St. Paul St., Baltimore, engr. Revised plans. CD 8/11/52 under LB.

▲ **Mich., Bloomfield Hills**—HOMES—Houseman-Spitzley Corp., Washington Blvd. Bldg., Detroit, Zone 26, Bloomfield Heights Subdivision homes 200 acres, Lone Pine Rd. and Franklin Rd. $2,000,000.

▲ **Minn., Crystal**—SHOPPING CENTER—Cusack & Carlson, Inc., 4815 Excelsior Blvd., Minneapolis, plans by Armstrong & Schlichting, 5 E. 22 St., Minneapolis, 1 and 2 story, 84,000 sq. ft. brick shopping center at West Broadway and 59 Ave. North. $1,500,000.

▲ **Mo., Kansas City**—DUPLEX BUILDINGS—Holmes Garden Apartments Inc., Geo. W. Miller, Vitor Bldg., Kansas City, Mo., 49 duplex bldgs. with 98 units, Bannister Rd. and Holmes to Troost Sts. $1,000,000.

O., Cincinnati—APARTMENT—Warner-Kanter Co., Chaucer Dr., 140-unit rental project, Glenwood and Washington Aves. $750,000.

▲ **O., Columbus**—LABORATORY—Battelle Memorial Institute, 505 King St., plans by Dan A. Carmichael, 5 E. Long St., 4-story 100,000 sq. ft. laboratory for chemical engineering research. $1,400,000.

▲ **Pa., Mt. Lebanon**—SHOPPING CENTER—Oscar Larson, 438 Winterhill St., Pittsburgh, 2 story 100x500 ft. brick, block shopping center, $1,500,000.

Pa., Pittsburgh—APARTMENT—Riviera Apartments, Inc., c/o Arthur E. Tennyson, archt., 666 Washington Rd., 7 story bsmt., 130x130 ft., brick, block apartment bldg., Avalon. $600,000.

▲ **Tex., Abilene**—OFFICE, BANK—Citizens National Bank, N. 1st and Pine Sts., plans by George L. Dahl, 2101 N. St. Paul St., Dallas and F. G. Olds, Compton Bldg., Abilene, 5-story bsmt. bank and office. $1,000,000. CD 7/21.

▲ **Tex., San Antonio**—OFFICE—United Services Automobile Assn., 1400 E. Grayson St., plans by Atlee B. & Robert M. Ayres, Transit Tower and Phelps & DeWees & Simmons, 1501-6 Majestic Bldg., home office. $1,750,000. CD 7/9.

Wis., Wauwatosa—CHURCH—Annunciation Greek Orthodox Congregation, c/o Dr. C. C. Cornell, 1300 N. Broadway, Milwaukee Zone 2, church, sanctuary, gymnasium, $500,000.

▲ **Man., Winnipeg**—SHOPPING CENTER—Greater Winnipeg Centre Ltd., c/o D. B. Landers, Edmonton, Alta., shopping center, Old Kildonan, $15,000,000. Project abandoned, C. Callebaut, c/o owner, archt. CD 11/18/52.

▲ **Man., Winnipeg**—HOUSING—Owner, c/o Kurnarsky & Weinberg, archts., 43 Luxton Ave., housing development on Lanark St., $2,000,000. Project abandoned building permit refused. CD 1/30.

▲ **Ont., Toronto**—HOUSING—Dorlen Realty Ltd., 4199 Dundas St. W., housing development incl 197 single family houses and 8 apartment blocks, 50-acre site at Lawrence Ave. W. and Keele St. $2,000,000. 8/13/53.

INDUSTRIAL BUILDINGS

▲ Ga., Savannah—PLANT—American Cyanamid Co., 30 Rockefeller Plaza, New York, 20, N. Y., plans by Robert & Co. Assocs., 96 Poplar St. N. W., Atlanta, Ga., plant, $14,000,000. CD 12/16/52.

▲ Ill., Bloomington—PLANT—General Electric Co., River Rd., Schenectady, N. Y. plant to manufacture industrial controls. $5,000,000.

Ill., Chicago—OFFICE—Beckley-Cardy Co., 1632 S. Indiana Ave., office and warehouse, $500,000.

▲ O., Columbus—WAREHOUSE—Albers Super Market, Inc., 100 N. Fountain Ave., Springfield, 1 story 350x750 ft. warehouse with 2-story attached office bldg. $1,500,000.

O., Dayton—PRODUCE CENTER—Dayton Produce Terminal Market, Inc., c/o Don Pinsky, 1925 Philadelphia Dr., 1 story 100x750 ft. brick food produce center, Webster St. $750,000.

▲ Okla., Tulsa—FEEDER PROJ., etc.—Public Service Co., 600 S. Main St., 9 feeder projects with 2 Arkansas River Crossing, $628,500; 6 new substations, $583,-838. R. K. Lane, c/o owner, engr. CD 8/9/51.

▲ Pa., Conshohocken—MILL—Alan Wood Steel Co., Ivy Rock Rd., 4 stand tandem cold rolled strip mill. $6,000,000.

▲ Pa., Oaks—PLANT—B. F. Goodrich Co., 448 Main St., Akron, O., tire and tube mfg. plant. $9,000,000.

Tex., Conroe—PLANT—Tex Aviation Corp. of Texas, c/o Rear Admiral James B. Sykes, Conroe, aircraft parts mfg. plant, $500,000.

Ont., Sarnia—FACTORY—Dow Chemical Co. of Canada, N. R. Crawford, pres., Sarnia, 1 story brick, steel, concrete factory for mfg. of sheet plastic. $500,000. CD 4/18/52.

UNCLASSIFIED

Colorado—RURAL DISTRIBUTION LINES—Union Rural Electric Association, Brighton, 75 mi. rural electric distribution lines, Douglass Co., Colo. 37P Douglas. $435,000.

Ga., Griffin—GAS DISTR. SYS.—Town, gas distr. lines. $750,000. (Correction—No such project planned). CD 5/28.

Mich., Detroit—AMPHITHEATER—City, James S. Holden, pres., Detroit Zoological Park Comn. 8450 W. 10 Mile Rd., Royal Oak, amphitheater for animal performances, Ten Mile Rd., Pleasant Ridge, $450,000. CD 3/30/43.

Oklahoma—PARK—State Planning & Resources Bd., State Capitol, Oklahoma City, plans by Black & West Tri-State Insurance Bldg., Tulsa, lodge, swimming pool, 20 cabin units for Negroes at Sequoyah State Park, east of Wagoner near Okay. $500,000.

Texas and Louisiana—COMPRESSOR STATIONS—Texas-Illinois Natural Gas Pipe Line Co., 1114 Texas Ave., Houston, Tex., compressor stations, near Hungerford, Tex $400,000; near Alexandria, La. $450,000.

Texas—RURAL DISTRIBUTION LINES—Bandera Electric Co-operative, Bandera, rural distr. lines, Bandera Co. $502,000. REA allot. CD 12/23/49.

▲ Texas—GAS LINES—Texas Eastern Transmission Corp., Texas Eastern Bldg., Shreveport, La., 5.3 mi. 6-in. gas line from Englehart Field to connection with Provident City, near Garwood, Colorado Co. $90,000; 11½ mi. 8-in. gas line lateral from Big Hill field to connection with Provident City-Beaumont main line, $150,000; 4,400 h.p. compressor station, near Shelbyville, Shelby Co. $1,731,000. CD 2/26/47.

Tex., Houston—PARK—Harris Co. Comrs. Court, Court House, reconstr. and expans. of Old Sylvan Beach Park, rein.-con. swimming pool, playgrounds, athletic courts, etc. $350,000. CD 11/7/52.

Man., St. Boniface—ARENA—Municipality, rein.-con. hockey arena on Enfield Cresent, $900,000, Project abandoned, J. A. Bilbeau, City Hall, St. Boniface, engr., N. M. Zunk, Norwood, archt. CD 3/16.

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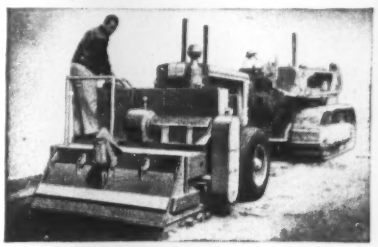

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Condensed into this one book are all the tips, methods, and techniques essential to more effective rigging practices in industrial and construction operations. Deals with everyday maintenance operations—with the transportation and handling of heavy machinery—with the erection and demolition of smaller size structures. Covers everything from ropes, hoisting chains and hooks, to slings and ladders. **By W. E. Rossnagel, Safety Eng'r, 321 pp., over 300 illus., $6.00.**

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This concise handbook discusses every detail of small residence and frame house construction, giving instructions and diagrams for each operation . . . covers methods that meet FHA requirements . . . gives best practices for framing, bracing, roofing, etc., and advantages of each method. **Second Edition** covers such new constructions and methods as the basementless house, the ranch-type house, picture windows, dry-wall construction, flat-type roof construction, and new methods of insulation and ventilation. **By E. A. Lair, Inst. in Building Trades, Jacksonville (Ill.) H.S. 2nd Ed., 310 pp., more than 200 illus., $4.75.**

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A helpful reference manual that can save you time, trouble, and money. It helps you ward off costly lawsuits by showing you—before you become involved—different types of legal troubles likely to occur in connection with construction work. It reviews and discusses 46 most common problems involved in the performance of a construction contract—indicates clearly how you can eliminate obstacles in your own construction relations. **By I. Vernon Werbin, Member, New York Bar. 227 pages, $5.00.**

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UNIT PRICES

Delaware River intercepting sewer

Bidding was widely spaced on a $595,525 sewer contract awarded by the city of Camden, New Jersey. The lowest of four bids, entered by Associated Constructors, Orange, N. J., was 52% below the high bid by S. J. Groves & Sons Co., Woodbridge, N. J. Associate was awarded the contract. The low bid was also 13% below the second low bid and 32% below the next to high.

Havens & Emerson, New York, are the engineers.

Work consists of installing an intercepting sewage along the Delaware River front and Cooper River. It will be used for transporting dry weather sewage flow to a main sewer plant which is now under construction. All materials are to be furnished by the contractor.

In this area plasterers are receiving $3.475 per hr; steamfitters, $3.29 per hr; carpenters, $3.24 per hr; and common laborers, $2.05 per hr. The project is to take 400 calendar days.

Bidders include:

1	C Associated Constructors, Orange, N. J.	$595,525
2	C & T Construction Co., Inc., Collingswood, N. J.	688,543
4	S. J. Groves & Sons Co., Woodbridge, N. J.	1,231,060

Bids: 3-4-53 Item	Unit	Quantity	Unit Prices 1 C	2
Earth excavation	cy	43,000	$2 80	$4.20
Earth exc below plan depth	cy	100	15 00	10 00
Rock excavation	cy	50	20 00	25 00
Foundation cushion	cy	1,000	5 00	10.60
Bedding sand, gravel or ings	cy	200	10 00	6.85
Wood piles	lf	9,000	0 50	2.05
Lumber left in place (sheeting & shoring)	mfbm	600	200 00	75.00
Lumber left in place (in foundations)	mfbm	60	25 00	75.00
Concrete, class A	cy	160	60 00	100 00
Concrete, class B	cy	700	20 00	20 00
Additional Portland cmt	bbl	10	10 00	4 75
Brick masonry	cy	10	100 00	90 00
Steel reinforcement	t	8	500 00	250 00
Misc cast iron work	lb	14,000	0 30	0 16
Misc steel work-painted	lb	100	1 00	0 60
Misc steel work-galvanized	lb	100	1 00	0 70
18" ext str vit pipe & specials	lf	2,800	10 00	7 25
Std str RC culv pipe, 24"	lf	75	16 00	8 20
36"	lf	600	17 00	15.75
36", ext str	lf	4,500	18 00	24 00
42", ext str	lf	2,200	22 00	29 00
Corr culv pipe, 60"	lf	230	95 00	130 00
66"	lf	50	100 00	135 00
Vit pipe underdrain, 6"	lf	500	2 00	2 00
8"	lf	500	2 50	3 00
B & S cast iron pipe	t	105	180 00	300 00
Mech joint cast iron pipe	t	5	300 00	315 00
B & S CI pipe fittings	t	1	500 00	375 00
Mech joint CI pipe fittings	t	0 5	600 00	400 00
Special CI pipe fittings	t	0 5	500 00	460 00
Standard manholes	ea	35	325 00	785 00
Ext depth of manholes	vf	230	40 00	50 00
Rem & replace std inlets	ea	8	300 00	200 00
2" air valve assembly	ea	1	250 00	250 00
36" x 48" tide gates	ea	2	1,000	1,200
48" x 48"	ea	2	1,700	2,000
Regulator equipment	ls	1	5,000	8,600
Painting	ls	1	250 00	365 00
Waterproofing	sy	800	2 00	1 00
Restore conc sidewalks	sy	3,600	4 00	5 25
Reset stone curbing	lf	400	2 00	2 50
Reset gutters	lf	100	5 00	2 50
Reset combination curb & gutter	lf	300	6 00	3 00
Restore conc pavement	sy	800	10 00	13 00
Restore Belgian block pavement on conc base	sy	100	8.00	11.60
Restore asph pvmnt, type A	sy	2,700	6 00	7.30
type B	sy	1,000	5 00	4 15
type C	sy	1,200	3 50	2.00
Railroad crossings	ls	1	2,000	2,000

Bridge, Georgia

Nine bidders competed for the $104,080 Johnson Road bridge contract awarded by the city of Atlanta, Georgia to C. L. Rhodes, Decatur, Georgia, the low bidder. Bidding was close with an average spread of only 3% between each of the bids. The low bid was 23% below the high and 8% below the second low. The Bridge Division of the Atlanta Construction Department did the engineering work.

The bridge will consist of two 40-ft spans and one 70-ft span measured from the centers of bearings on the abutments to the centers of the piers. Work includes the construction of the abutments and piers, steel beams and the concrete deck. The roadway will be 42-ft wide with two sidewalks, 9 ft-6 in. each. The contract also provides for raising, widening and paving of 253 ft of approaches and the removal of the 20-ft wide, 100-ft long, old truss bridge.

Bricklayers are receiving $2.90 per hr; structural iron workers, $2.60 per hr; carpenters, $2.35 per hr; hoisting engineers, $2.25 per hr; and common laborers, $1.20 per hr. All materials are to be furnished by the contractors.

Bidders include:

1	C. L. Rhodes, Decatur, Georgia	$104,080
2	G. L. Strickler, Austell, Georgia	113,421
9	Southeastern Engineering Corp., Atlanta, Ga.	134,936

Bids: 4-28-53 Item	Unit	Quantity	Unit Prices 1 C	2
Remove existing bridge	ls	1	$2,000	$2,000
Clearing & grubbing	ls	1	100 00	100 00
Remove existing pavements	sy	985	0 50	0 40
Remove existing curbs	lf	68	0 50	0 20
Unclassified excavation	cy	738	0 75	1 00
Bridge excavation, no. 1	cy	1,359	8 00	6.00
Excavation for culverts & minor structures	cy	221	2 00	2 00
Borrow excavation	cy	200	1 50	1 00
6" black base (hot mix)	sy	1,265	2 95	2.35
1" Alabama asph surface course (hot mix)	t	63	12 00	13 00
Cl A concrete	cy	807 5	38 50	48 00
Reinforcement steel	lb	106,500	0 10	0 11
Structural steel	ls	1	31,800	35,200
Steel pipe rail on bridge	lf	300 25	15 00	14 80
Steel pipe rail on walls	lf	103 83	10 00	8 00
Stl H piling (8"x8"x36lb ft)	lf	928	3 00	4 00
4" CI pipe in bridge deck	lf	16	1 50	2 50
3" CI pipe drains in abut	lf	42	1 50	2 00
Typical bri catch basins 4' or less	ea	3	200 00	150 00
Depth catch basins	lf	19	20 00	20 00
Special brick catch basin no. 3	ea	1	300 00	225 00
15" reinf conc pipe	lf	94	3 50	3.00
Stone backfill at abutments for drainage	cy	40	5 00	4 00
Grouted stone gutters	lf	152	2 00	3 68
New granite curb, straight	lf	413	1 40	1 35
New granite curb, radius	lf	36	2 00	2 00
Reset old granite curb	lf	33	0 70	0.80
Adjust existing MH to new grades and lines	ea	13	20 00	30.00

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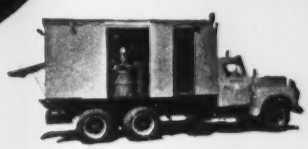

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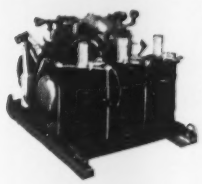

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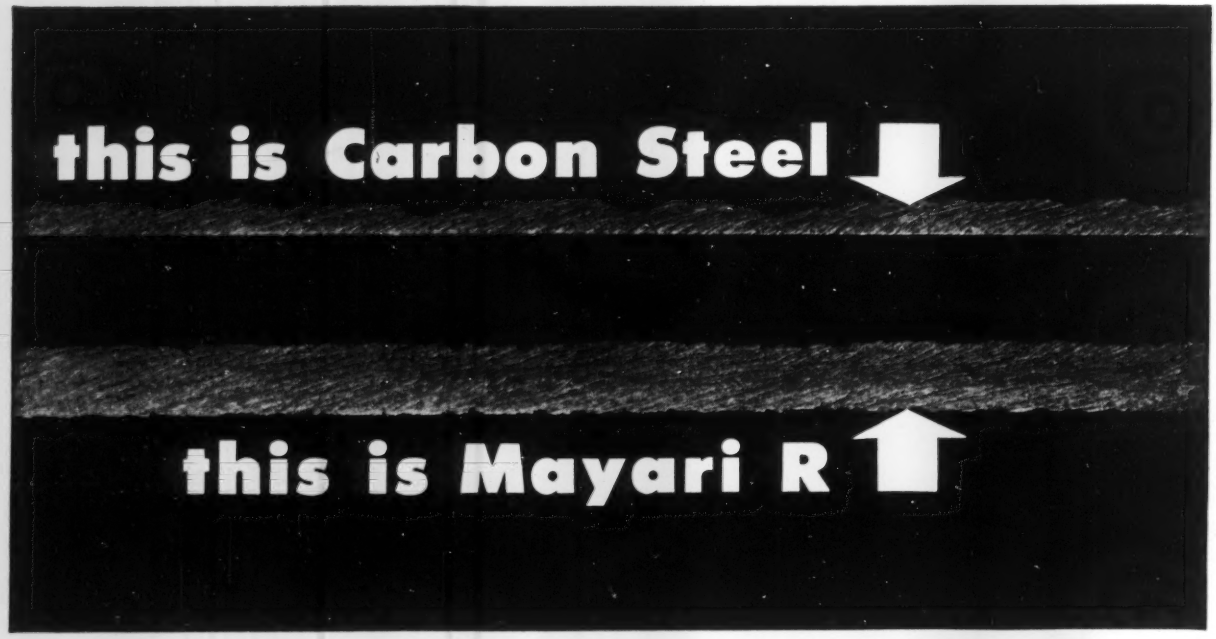
after 5 years' exposure



The upper portion of this unretouched photograph shows a cross-section of a carbon steel sheet, and the lower portion shows a Mayari R sheet, after identical exposure. Both sheets were of the same thickness when originally exposed to the atmosphere. The photograph is approximately 4 times actual size.

Mayari R, Bethlehem's low-alloy, high-strength steel, has 5 to 6 times more resistance to atmospheric corrosion than plain carbon steel . . . and 2 to 4 times as much as copper-bearing steel.

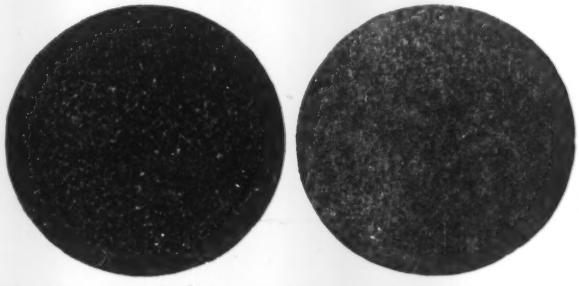
These figures are the findings of extensive tests conducted in different types of atmosphere. They have been confirmed in practice by applications that range from railway hopper cars to pole line hardware.

Here's the reason why Mayari R has such excellent corrosion-resistance. When it is exposed, a thin, tight layer of rust forms on the surface to act as a protective coating. This rust does not flake off in the manner of carbon-steel rust. Instead, it holds securely to the surface and retards any further corrosive action.

Another interesting feature of Mayari R is its superior ability to retain paint. Tests show that primer paint will last 20 to 80 pct longer on Mayari R than on carbon steel, depending upon the type of primer used.

Mayari R has other advantages, including higher yield-point and greater tensile-strength than are found in ordinary steel. These features contribute to longer life, lower maintenance and improved design of equipment and structures.

For more information about Mayari R, its properties and its recommended applications, call or write any of our sales offices and ask for a copy of Catalog 259.



Surface views of the same test specimens as shown in the upper photograph. After 5 years' exposure the Mayari R (right) is relatively smooth while the carbon steel (left) is rough and deeply pitted.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

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BETHLEHEM STEEL

Mayari R *makes it lighter... stronger... longer lasting*

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 19 Rhode Island
STREETS AND ROADS
August 18 Massachusetts August 19 Rhode Island

BUILDINGS

LOW BIDS AND CONTRACTS

H. P. Cummings Constr. Co., 14 Prospect St., Ware, Mass. CA **$700,000.** Y.M.C.A. BLDG., FITCHBURG, MASS. Fitchburg Young Men's Christian Assn., c/o G. K. Simonds, Jr., chn. Bldg. Comn., Wallace Ave., Fitchburg, Mass. Bids June 22, awarded July 29. CD 6/15.

▲ **Smith Constr. Co.,** 101 Water St., Derby, Conn., CA, **$1,750,000,** STORE, WAREHOUSE and SERVICE STATION, 2301 Dixwell Ave., HAMDEN, CONN. Sears, Roebuck & Co., 201 Brookline Ave., Boston, Mass. Bids July 21. CD 7/14.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 21 Pennsylvania
STREETS AND ROADS
August 21 Pennsylvania

▲ **N. Y., Mineola**—B.A. 8/25—Nassau Co., Chas. Strohson, clk., Old Court House, lateral sewers, Dist. 2-FP. $2,455,030. CD 9/20/51.

BIDS ASKED—BUILDINGS

Pa., Bethlehem—SHOP—B.A. 8/17—Bethlehem Steel Co., 701 E. 3 St., Machine Shop Bldg. 10 addn. $800,000.

† **Md., Aberdeen Proving Ground**—LABORATORY, etc.—B.A. 8/18—U. S. Eng., 24 St. and Maryland Ave., Baltimore, Zone 3, 2 laboratory bldgs., 2 boiler bldgs., 4 service magazines, 4 barricades, utilities, Eng. 18-020-54-2. $800,000. Jack S. Steele, 1300 W. Hunting Park Ave., Phila., Pa., engr. and archt. CD 7/16.

▲ **N. Y., Massapequa** — SCHOOL — B.A. 8/27—Bd. Educ., Union Free School Dist. 23, Tracy Logan, clk., Massapequa, general construction, plumbing, heating, ventilating and electrical work for Hawthorn Elementary School. $1,050,000.

Pa., Swarthmore—SCHOOL—B.A. 9/2—Swarthmore School Dist., elementary school, $750,000. Howell Lewis Shay, Packard Bldg., Phila., archt. CD 2/5.

▲ **Del., Wilmington**—SCHOOL, etc.—B.A. 9/3—Temple Beth Emeth, c/o Judge Daniel Herrmann, Public Bldg., Wilmington, religious school, chapel and social bldg. $1,500,000. Bloch & Hesse, 18 E. 41 St., New York, N. Y., archts. CD 3/24/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Jones Beach State Parkway Auth., Belmont Lake State Park, Babylon,

Hendrickson Bros., 63 N. Central Ave., Valley Stream, N. Y. CA **$1,289,000.** Contr. 2, grading, drainage, paving, grade separations, etc. for Southern State Parkway imprvt. from Dogwood Ave. to Hempstead Lake, Nassau Co. Bids July 28. CD 7/9.

▲† **Corbetta Constr. Co.,** 220 E. 42 St., New York 17, N. Y. CA, **$8,967,000** reconstr. Dry Dock 3, New York Naval Shipyard, NOY 74770, Spec. 35706, BROOKLYN, N. Y. P. Wks. Office, Third Naval Dist., 90 Church St., New York 7, N. Y. Parson, Brinckerhoff, Hall & Macdonald, 51 Bway., New York 6, N. Y., design engineers for Navy. Bids July 24, awarded Aug. 4. CD 6/24.

▲ **A. Freidericks,** 810 Lake St., Rochester, N. Y. LB $649,763, general contract;

Nichols Eng. & Research Corp., 70 Pine St., New York, N. Y., LB $887,500 7 furnaces and flues;

International Chimney Co., Wickwire Bldg., Buffalo, LB $67,400, chimneys;

W. A. McCormick, 4 Lake Ave., Rochester, N. Y., LB, $72,500, plumbing work;

Manning, Maxwell & Moore, Inc., W. Broadway Heights, Muskegon, Mich. LB, **$174,800,** cranes for West Side Incinerator. ROCHESTER, N. Y. City, City Hall, Rochester, N. Y. Bids July 23. CD 6/29.

▲ **NEW JERSEY**—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton,

Brann & Stuart, Suburban Station Bldg., Phila., Pa., CA, **$1,306,355,** Contract 66, Section 8, substructures, decking, grading, drainage, paving for bridges at Five Crossings, Twps. Dover and Lakewood and Wall, Ocean and Monmouth Counties. Bids July 9. CD 6/23.

NEW JERSEY—New Jersey Hy. Auth., State Hy. Dpt. Office Bldg., 1035 Parkway Ave., Trenton,

Elmhurst Contg. Co., Inc., 53-09 97 Pl., Corona, N. Y., CA, **$937,694,** Contract 65, Section 8, substructures, decking, grading, drainage, paving, bridges at Five Crossings, Brick and Lakewood Twps., Ocean Co. Bids July 6. CD 6/17.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 N. Office Bldg., Harrisburg,

C. J. Langenfelder & Son, Inc., 8427 Pulaski Hy., Baltimore, 24, Md., CA. **$2,475,870** 10,994 ft. divided c. conc. 24 ft. wide on each side of divisor; 3 steel plate girder and one I-beam bridge, T.R.U.S. 1, Falls Twp., Morrisville Boro, Bucks Co. Bids July 17, awarded July 30. CD 7/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Webb & Knapp, Inc.,** 383 Madison Ave., New York, N. Y., Own Forces. **$3,000,000.** two 3 story STORES and OFFICE buildings, Main St. and Roosevelt Ave., FLUSHING, N. Y. R. C. Brugnoni & Rudolf C. P. Boehler, 383 Madison Ave., New York, N. Y., archts. CD 8/9/46.

State Div. Purchase & Property, State House, Trenton, N. J., rejected bids Apr. 8, ADMINISTRATION BLDG. for State Dpt. Educ., TRENTON, N. J. LB, $714,000, Will re-advertise. CD 4/16, under LB.

Henry M. Taggart, Inc., 1924 Chestnut St., Phila. 3, Pa., CA, **$732,200,** general constr. Junior HIGH SCHOOL, for Ridley Twp. School Dist., FOLSOM, PA. State Public Bldg. Auth., 25 and Market Sts., Harrisburg, Pa. Bids July 2. CD 7/8. under LB.

▲ **Edward Clarke,** 202 Kathmore Rd., Havertown, Pa., CA. **$1,500,000,** SHOPPING CENTER and SUPERMARKET, Township Line Rd., UPPER DARBY, PA. Frank Reegon, c/o J. G. McGee, archt., 25 W. Wilmont Ave., Llanerch, Pa.

Joseph R. Farrell, Inc., 4422 Market St., Phila., Pa., LB, **$996,996,** DORMITORY, VILLANOVA, PA. Villanova College, Villanova, Pa. Bids July 22. CD 7/13.

▲ **Leimbach Constr. Co.,** 3906 Hickory Ave., Baltimore, Md. CA. **$2,486,350.** 2 and 3 story, masonry Woodbourne Junior High SCHOOL, Woodbourne and Beauregard Ave., BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. CD 7/28, under LB.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 21 Kentucky
STREETS AND ROADS
August 21 Kentucky, Tennessee

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Engineering Constr. Co.,** First National Bldg., Tulsa, Okla. CA **$6,000,000.** gas transmission lines from Knoxville to upper E. Tennessee TENNESSEE. East Tennessee Natural Gas Co., Kingston Pike, Knoxville, Tenn. Awarded July 31. CD 11/19.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

J. B. Michael & Co., 1021 Heywood St. Memphis, Tenn. LB **$837,606.** underpass and approaches I. C. R. R. on E. H. Crump Blvd. between Kansas St. and Main St. in Memphis, Shelby Co.,

Forcum-Jones, Dyersburg, Tenn. LB **$464,424.** constr. 5 bridges, approaches on 1.638 mi. Sect. Rte. 22 between point 3 mi. north of Samburg and Clayton, Obion Co. Bids July 31. CD 7/14.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Geo. T. McLean Co., Inc.,** High at Belt Line R. R., Portsmouth, Va. Owner Builds. **$425,000.** fifty-eight 1 story, frame, RESIDENCES, South Fairview; $575,000. seventy-nine 1 story, frame RESIDENCES, South Loxley Place; $465,000. sixty-four 1 story, frame RESIDENCES Norcom Park;

Algernon Blair, Inc., First National Bank Bldg., Montgomery, Ala. CA **$775,000,** one hundred and five 1 story, prefabricated frame RESIDENCES, Victory Park, PORTSMOUTH, VA. Grand total $2,240,000. CD 4/29.

James L. Bracewell Constr. Co., P. O. Box 471, Toccoa, Ga., CA, **$879,642,** HIGH SCHOOL, HOMER, GA. Banks Co. Bd. Educ., Homer, Ga. Bids July 1. CD 7/10, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 25 Ohio
August 25, 26, Michigan
STREETS AND ROADS
August 25, Ohio

▲ **Ill., Chicago**—B.A. 8/19—At office John F. Ward, purch. agt. Dpt. Purchases, Contracts & Supplies, City Hall, Zone 2, three sections of tunnel; Sect. A, four shafts, four lengths of tunnel in rock and one length of tunnel in clay, etc.; Sect. B, work shaft, two lengths of tunnel in rock etc.; Sect. C two shafts three lengths of tunnel in rock, one length of tunnel in clay, by-pass structure etc, connecting Central District Filtration Plant to Wilson Ave. Station, Total cost $16,000,000. Plans deposit $150. Extended date. CD 7/2.

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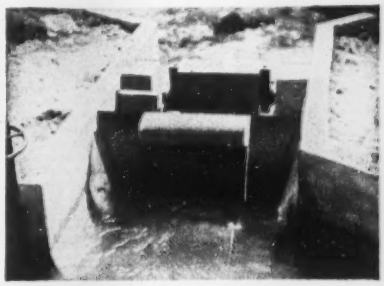
Ideal for sewage and water treatment plants. Accurately measures water in open ditches and canals. Settles water disputes. Water velocity will not affect accuracy. Easy to read. Self-cleaning. Built for long life of corrosion-resistant galvanized steel. Approved by State Engineers.



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Every manufacturer, design and production man should have this valuable data. Sent upon request.
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Saxe Welding Connection Units position and secure structural parts to be welded

Clip K3A permits an adjustable connection.

These widely used units eliminate all hole punching and, with welding, produce the most economical, safe and quickly erected structural frame.

Write for 1951 edition, Structural Welding Practice Manual.

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BIDS ASKED—BUILDINGS

▲ **Mich., Marshall**—COURTHOUSE—B.A. 9/1—Bd. Supervs. Calhoun Co., Court House, brick, steel, concrete, irregular dimensions county court house, incl. jail facilities, $1,250,000. Plans deposit $20, Lewis J. Sarvis, 258 Champion St., Battle Creek, archt. CD 1/29.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **S. E. Johnson Co.**, Salisbury Rd., Maumee, O., CA, $1,926,509, est. $2,216,250, grading, draining, paving Toledo's Oak Openings Airport, incl. runways, taxiways and aprons, TOLEDO, O. City, Arnold V. Finch, city mgr., City Hall, Toledo, O. Bids July 28, awarded July 29. Stapleton, McDonnell & Barber, Colton Bldg., Toledo, engrs. CD 4/14.

▲ **MICHIGAN**—State Hy. Dpt., 222 Townsend St., Lansing,
Louis Garavaglia, 24240 Mound Rd., Center Line, Mich. CA $1,611,311. est. $1,665,000. 2 rein.-con., steel bridges, ramps, retaining wall, utilities, BUI B 15 of 82-22 C2-U, BUI B25 of 82-22-12 C1-U, Wayne Co. CD 8/4, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲† **Fairbanks, Morse Co.**, 49 Central St., Cincinnati, O., CA, $3,554,350, electric motors;
George Koch Sons, Inc., 10 S. 11 Ave., Evansville, Ind., CA, $391,198, furnish supply and exhaust ducts;
General Electric Corp., Portsmouth, O., CA, $316,909, furnish control boards;
Graybar Electric Co., 115 W. McMicken St., Cincinnati, O., CA, $189,558, furnish control panel assemblies;
Joseph L. Ryerson & Sons, Inc., 3475 Spring Grove, Cincinnati, O., CA, $116,717, furnish steel base plates supports and tie-rods for Gaseous Diffusion PLANT (Subcontractors under Peter Kiewit Sons' Co., P.O. Box 268, Portsmouth, O.) for Atomic Energy Comn., 1901 Constitution Ave. N.W., Wash., 25, D. C., PIKETON AND WAKEFIELD, O. Grand total, $4,568,732. CD 8/13/52, under CA.

▲ **Bechtel Corp.**, 220 Bush St., San Francisco, Calif., CA, Total est. $159,000,000, reawarded contract POWER PLANT JOPPA, ILL. Electrical Energy Inc., 315 N. 12 Blvd., St. Louis, 1, Mo. Former contract cancelled. CD 1/15/51 CA and 2/9/53.

Hamann Constr. Co., 408 Commercial St., Manitowoc, Wis., CA, $700,000, 2 and 3 story, bsmnt., irregular 190x313 ft., St. Mary's HOME for Aged, MANITOWOC, WIS. Felician Sisters, 8425 S. Saginaw St., Chicago, Ill. Bids July 16. CD 7/10.

WEST OF MISSISSIPPI

BIDS ASKED—BUILDINGS

Minn., Elmore—SCHOOL—B.A. 8/27—Bd. Educ., T. Wicks, Jr., clk., school, $700,000. Plans deposit $20. Haarstick, Lundgren & Assocs., W. 1385 First National Bank Bldg., St. Paul, archts. CD 7/15, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ † **G. L. Tarlton Contg. Co.**, 5505 Dale Ave., St. Louis 10, Mo. CA $4,800,000. general contract expansion of navy facility at McDonnell Aircraft Corp. PLANT to consist of 503x804 ft. mfg. bldg., 62x63 ft. fuel test laboratory, 52x72 ft. oil storage bldg., 20x45 ft. fire protection pump house, storage tank, pedestrian underpass for Bureau Yards & Docks, Navy Dpt., ROBERTSON (ST. LOUIS 21, P. O.), MO. McDonnell Aircraft Corp., Lambert Field, St. Louis, Mo. CD 8/4 under LB.

▲ **Frazier-Davis Constr. Co.**, 13119 Macklind Ave., St. Louis 10, Mo. CA Est. $1,000,000. 1 story, brick, steel, rein.-con., 121,000 sq. ft. WAREHOUSE and SERVICE BLDG., Oakland and Macklind Aves., ST. LOUIS, MO. Scruggs-Vandervoort-Barney, Inc., 915 Olive St., St. Louis 1, Mo. Abbott, Merkt & Co., 10 E. 40 St., New York, N. Y., engrs.-archts. CD 4/30.

▲ **Olive & Myers Furniture Mfg. Co.**, 2220 Young St., Dallas, Tex. will not construct furniture mfg. plant, ATHENS, TEX. $1,750,000. Project abandoned. CD 5/20.

▲ **Melvin A. Silverman**, 2505 S. MacGregor St., Houston, Tex., project held up indefinitely 14 story, bsmnt., apartment-hotel, HOUSTON, TEX. $6,000,000, CD 5/8.

▲ **General Electric Corp.**, 11 Japhet St., Houston, Tex. cancelled bids to have been opened June 29, electric appliance plant, TYLER, TEX. $7,000,000. Project postponed. CD 6/17.

Gasoline Plant Constr. Corp., N. Esperson Bldg., Houston, Tex. CA $800,000. REFRIGERATION PLANT, near WINNIE, TEX. Texas Gas Corp., c/o Russell Wiggins, Shell Bldg., Houston, Tex. CD 8/5

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
BRIDGES
August 26 California
STREETS AND ROADS
August 26 California

▲† **Washington**—B.A. 9/10—U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash., installing powerhouse, appurtenances at Chief Joseph Dam, Bridgeport, CIVENG-54-2. $5,000,000. CD 5/26, under LB.

▲ **CALIFORNIA**—B.A. 9/15—Division of San Francisco Toll Crossings, 2054 University Ave., Berkeley,
Marin and Contra Costa Counties—electrical and mechanical work for approaches, toll plaza, etc., Richmond-San Rafael Bridge across San Francisco Bay. CD 7/31.

BIDS ASKED—BUILDINGS

▲ **Calif., San Francisco**—HOUSING—B.A. 8/25—Housing Auth. of City and San Francisco Co., 440 Turk St., Alemany Housing Project CAL 1-16, incl. dwelling units, laundry units, site imprvs. $1,500,000. Plans deposit $100. CD 10/2.

SOON LETS CONTRACT—BUILDINGS

▲ **Calif., San Leandro**—WAREHOUSE, etc.—Western Electric Co., 1400 53 St., Emeryville, soon lets contract warehouse, shop and office bldg., site preparation, grading, storm sewers, Williams St. and Doolittle Dr. $3,500,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Cherf Bros. & Sandkay Bros.** Box 938, Ephrata, Wash., LB $2,249,966, apron paving, warm-up pad, roads, utilities, Larson Air Force Base, Eng-45-165-53-34, HOSES LAKE, WASH. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids July 30.

† **OREGON**—Bureau P. Rds. Dpt. Commerce, Morgan Bldg., Portland.
G. D. Dennis & Sons and G. D. Rennells Constr. Co. 7355 S. E. Johnson Creek Blvd., Portland, Ore. CA, $809,953 14.463 mi. West Fork Section Smith River Road, Lane Co. Bids July 21, awarded July 31. CD 7/27, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Bechtel Corp.**, 220 Bush St., San Francisco, Calif., CA. Est. $10,500,000, 66 kw. STEAM POWER PLANT Carbon Plant at Castle Gate near PRICE, UTAH. Utah Power & Light Co., Kearns Bldg., Salt Lake City, Utah. CD 1/16.

▲ **Bechtel Corp.**, 220 Bush St., San Francisco, Calif., CA. Est. $15,500,000, 100,000 kw. STEAM POWER PLANT, Unit 3, Gadsby Plant, SALT LAKE CITY, UTAH. Utah Power & Light Co., Kearns Bldg., Salt Lake City, Utah. CD 8/29/50.

▲ **M & K Corp.**, 200 Financial Center Bldg., San Francisco, Calif., LB. $3,950,995, main INSTITUTION GROUP, California Medical Facility, VACAVILLE, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids July 28. CD 6/26.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION
STATE HIGHWAY LETTINGS
STREETS AND ROADS
August 21 Ontario

▲ **Alta., Cold Lake**—BARRACK BLOCKS—B.A. 8/19—Defence Constr. Ltd., 56 Lyon St., Ottawa, Ont. two O.R. barrack blocks, R.C.A.F. Station, $1,500,000. Plans deposit $100.

BIDS ASKED—BUILDINGS

Ont., Toronto—OFFICE—B.A. 8/18—Household Securities Ltd., 80 Richmond St. W., 6 story, bsmnt., 85x100 ft., brick, stone, concrete office, 85-89 Bloor St. E., $750,000. Marani & Morris, 1250 Bay St., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

McNamara Constr. Co. Ltd., 42 Industrial St., Toronto, Ont., CA, $835,200, harbor imprvs., rubble mound breakwater, PORT ARTHUR, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids July 29. CD 8/5, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

E **R. Tremblay Constr. Co.**, 39 Goulburn St., Ottawa, Ont. and **Geo. H. Ash**, Ottawa, Ont. CA, $790,000 100 HOUSES, Prince Albert, Queen Mary and King George St., Overbrook, OTTAWA, ONT. Ottawa Lowren Housing Co. Ltd., 95 Echo Dr., Ottawa, Ont. Bids July 24. CD 7/20.

▲ **Reuben R. Dennis**, 125 Kilbarry Rd., Toronto, Ont., Owner Builds, $2,000,000, 12 story, concrete, steel, brick stone, APARTMENT, 3000 Yonge St., TORONTO, ONT. CD 5/7.

▲ **Furman Constr. Co., Ltd.**, 2054 St. Catherine St. W., Montreal, Que. Owner Builds, $1,500,000. 125 BUNGALOWS, Cote Vertue Rd. and Ville St. Laurent-City limits, MONTREAL, QUE.

▲ **Louis Donolo, Inc.**, 8320 St. Lawrence Blvd., Montreal, Que. CA $1,697,000, 4 story, bsmnt., 45x175 ft. and 40x80 ft. OFFICE BLDG. Commerciale St., LEVIS, QUE. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont. Bids July 15. CD 8/4.

U. S. POSSESSIONS

BIDS ASKED—HEAVY CONSTRUCTION

▲ **T. H., Honolulu**—TUNNEL—B.A. 10/20—City, City Hall, Kalihi Highway Tunnel, Section C, $3,500,000. Plans deposit $100. CD 4/16.

(Proposal Advertisements see pp. 94 to 97)

State and municipal bonds sold for new construction—1953

Type of work	First 7 months 1953	1952	% chg '52-'53
	(millions)		
All construction	$2877.6	$2221.6	+30
Buildings	$1358.2	$ 954.6	+42
Schools	953.8	654.4	+46
Housing	212.8	181.2	+17
Other buildings	191.6	119.0	+61
Heavy construction	$1519.3	$1267.0	+20
Highways*	538.5	665.0	−19
Bridges	221.7	41.3	+437
Sewerage	300.5	135.2	+122
Waterworks	214.1	139.8	+53
Earthwork, waterways	14.6	8.5	+72
Unclassified	229.9	277.3	−17

* Includes Toll Road Authorities.

Source: Compiled by ENR Business News from Commercial & Financial Chronicle

Seven-month sales of municipals are 30% over figure for same period in 1952

State and municipal bond sales to finance new construction reached $2.9 billion for the first seven months of 1953—to continue a surprising show of strength in the market for such securities. The total is 30% more than the amount of dollars borrowed in the same period of 1952.

Earlier this year, market observers had expressed fears that rising bond yields would push the cost of money out of the reach of many smaller governmental units, and thus force a slowdown of new construction work. But since June there has been a turnaround in the municipal market (ENR July 23, p. 78). Standard & Poor's average yield index for high-grade municipal bonds, in fact, has drifted steadily lower in the last five weeks—from 3.07% in the first week of July to 2.91% last week.

• **Where it went**—Schools and highways have accounted for the lion's share of the 1953 financing to date, taking 52% of the total sales. School bonds sold total $954 million, highways $539 million through the end of July.

Other top figures are: sewerage, $301 million; bridges, $222 million; waterworks, $214 million. Largest bond sale of the year so far was $150-million issue to finance New Jersey Garden State Parkway, early in July.

In fact, all types of construction (except highways) show big gains in new financing this year, as compared to 1952 (see table). While highway bond sales are off 19% compared to a year ago, this is due to the $325-million sale for the Ohio Turnpike in June 1952. (The Ohio Turnpike sale alone accounted for about half the total dollar value of bond sales for the first seven months of 1952.)

Interestingly, the bond sales total is almost exactly the same as the $3 billion in state and municipal construction contracts reported by ENGINEERING NEWS-RECORD so far this year. But, of course, a substantial part of these contracts will be paid for out of taxes and federal aid funds. So the presumption is that much of the money just raised by bond financing will be available to pay for contracts which have not been awarded at the present time.

Prefabricator will make buildings from steel

Although it is a subsidiary of U. S. Steel Corp., prefabricator Gunnison Homes, Inc. has always made its buildings out of wood. Last week, however, Gen. John J. O'Brien, who is president of the subsidiary, announced that:

• Gunnison would soon be producing steel buildings at its new plant in Harrisburg, Pa.

• To "provide closer identification with the parent corporation," its name would be changed to U. S. Steel Homes, Inc.

Gunnison Homes, founded by prefab pioneer Foster Gunnison, was acquired by U. S. Steel in 1944. Along with its new line of steel buildings, the company will continue to produce the Gunnison line of plywood homes at New Albany, Ind., where its general offices are located.

The new line of steel construction at Harrisburg is the result of several years of engineering and planning, says General O'Brien. The company has now developed a basic four-foot-wide modular panel, that is composed of a steel framework and steel sheets which enclose pre-formed mineral fiber construction.

The new units are designed not only as homes, but as specialized steel structures which can be expanded, taken apart, and moved from place to place.

Initial production at the Harrisburg plant will include hospitals, community clinics, schools and other institutional structures.

Shortage of warehouses means construction jobs

Construction men interested in lining up future jobs might devote some time to studying warehouse facilities of private companies in their area. A study just issued by the National Board of Fire Underwriters, a leading insurance group, indicates that there is a shortage of warehouse space in the U. S.

The study estimates that although there are nearly 500,000,000 sq ft of available storage space for merchandise, household goods, and cold storage, space is at such a premium that warehouse men are violating principles of safe storage.

It is these violations about which the National Board, as an insurance group, is concerned. It says that after a series of warehouse fires in one eastern city, a careful check was made of 295 buildings with warehouse facilities. "The investigation revealed that 95% had one or more serious fire hazards or protection deficiencies."

The implications of the study are:

• U. S. industry needs more warehouses.

• Some warehouses need structural improvements in order to meet safety standards.

The recent study, which is entitled "Fire Safeguarding Warehouses" is available from the National Board of Fire Underwriters. This organization has offices located in New York, Chicago and San Francisco.

No help from FNMA

'One-for-one' plan won't ease mortgage market

Home builders looking for advance commitments on mortgage financing won't get much help from the "one-for-one" plan just put into effect by the Federal National Mortgage Assn. That's the verdict of mortgage men who have watched how the plan has been working in its first few weeks.

The one-for-one setup, worked out by Fanny May in cooperation with the National Association of Home Builders, offers home builders advance commitments to buy VA and FHA mortgages, provided that they in turn buy at fixed prices an equal amount of the mortgages Fanny May now has in its portfolio. The idea is that they would resell in the open market the mortgages they get from Fanny May.

Here's how the one-for-one plan works: The mortgage broker or other temporary mortgage lender who is working with the builder, or the builder himself acting as a temporary mortgage lender, would take an option on a block of mortgages held by FNMA. If he were successful in finding purchasers for these mortgages, he would buy them from Fanny May, and pass them on to the new purchasers. Then, for a 1% fee he would get a firm commitment from FNMA for one year to buy his new mortgages at par. When he uses the commitment, he pays another ½% fee. The builder would absorb these fees, plus any loss in reselling the FNMA mortgages.

• **Unrealistic**—Mortgage experts point out, however, that the selling prices set by Fanny May are unrealistic, in view of the present tightness of the mortgage market. In order to find new buyers, builders must take a loss on the mortgages they buy from Fanny May. Since they must pay a 1% fee to get the commitment, plus another ½% if they use it, the cost becomes rather high.

FNMA will sell its 4% mortgages at 96, its 4¼% paper at 97¼, and 4½% loans at par. But mortgage bankers say that the 4% mortgages are being resold in the open market at prices ranging from 91 to 93, with correspondingly higher prices for the loans carrying a higher interest rate. The reason for these low prices, of course, is the increasing tightness of money during the last few months. Furthermore, many banks, life insurance companies and other previously heavy mortgage buyers are no longer as interested in mortgages as they used to be, because they do not want to overbalance their portfolios.

Some mortgage bankers do report that they see a slight easing in the mortgage market for VA and FHA mortgages since the Federal Reserve System relaxed its "tight money" policy (ENR July 2, p. 74). But they say that the volume of mortgage commitments being sought by builders from Fanny May is quite small, and they do not expect the situation to change, unless there is a strong downtrend in interest rates.

Washington more optimistic on new 1953 construction

Government economists have revised upward their estimates on dollar value of new construction in 1953. They now think that construction put in place this year may hit $34.5 billion, instead of $33.5 billion. Either one of these totals would be a record, beating 1952 figure of $32.3 billion.

Estimates by the Commerce and Labor Departments on new construction during the first seven months of the year total $19.3 billion, up 8% over the same period last year. New construction hit a new peak for the month of July—$3.3 billion, 8% above the 1952 month, and 2% above June.

The July gains, according to the government reports, were due to "seasonal gains" in highway construction and public utility construction, and a "more than seasonal" rise in commercial construction. Dollar value of new private residential construction ran over $1 billion for the third straight month.

New York gets garage with automatic parking

An automatic garage is scheduled for construction in New York City—to store cars by raising them from street level to parking bays on the five upper floors by a combination traveling crane and hydraulic lift.

Designer and builder of the automatic garage is Pigeon Hole Parking, Inc., of Spokane, Wash., which will license its idea to the garage owner on a royalty basis. Owner of the first garage in the New York area is 720 Third Ave. Corp., a subsidiary of General Realty Corp. The parent company has an exclusive franchise for selling the automatic garage with its tailor-made equipment to real estate investors in the New York area.

GM to buy Euclid

Tax reasons are behind sale of earthmoving co.

For the first time, one of the big auto manufacturers has moved into the construction machinery field. The newcomer is General Motors Corp., the biggest of them all, which last week confirmed rumors that have been floating around for months. GM will buy Euclid Road Machinery Co., of Cleveland, by offering its stockholders about 305,000 shares of GM stock, worth about $18.5 million at present market prices. Euclid is a leading maker of off-the-road earthmoving equipment. GM has been selling it transmissions and diesel engines for some time.

Although Euclid stockholders must approve the deal, no hitch is expected. Most of the stock, (perhaps 80%) is held by the Armington family, prominent in Euclid management. Management of the company will remain unchanged, and GM presumably will retain Euclid's present distributor setup.

• **Taxes**—Euclid management finally decided to sell for tax reasons. The company has quadrupled in size since World War II, and was planning a $10-million expansion in the Cleveland area. However, due to heavy taxes, working capital was not available, so the company decided to sell out to GM.

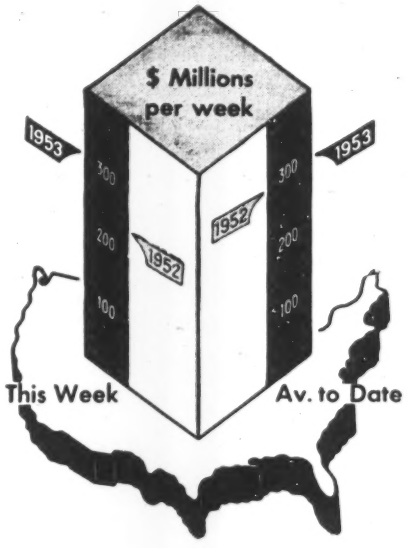
Business briefs . . .

• **Allis-Chalmers net**—Net income for the first six months of 1953 for Allis-Chalmers Mfg. Co. was $10.5 million, after full provision for federal income and excise taxes. In the same period of 1952, the company reported net income of $11.5 million.

• **Ask bond bids**—The Indiana Toll Road Commission has invited six investment firms to submit bids on purchase of more than $225 million in bonds to finance the proposed Northern Indiana Turnpike.

• **Steel hits high**—Shipments of fabricated structural steel for June hit their highest point since July 1930, says the American Institute of Steel Construction. Shipments in 1953 totaled 274,587 tons—highest since July 1930, when 274,800 tons were shipped. During the first half of 1953, said AISC, 1,560,470 tons were shipped.

Activity This Week



As reported to ENR, (in millions of dollars)

Amount of contracts let

	This Week	Cumulative 33 wks 1953	1952	% chge
Federal	$27.0	$1,020.8	$2,488.8	−59
State and Municipal	116.6	3,212.9	2,731.0	+18
Total pub.	143.6	4,233.7	5,219.8	−19
Total priv.	167.7	5,638.8	4,364.0	+29
U. S. Total	**$311.3**	**$9,872.5**	**$9,583.8**	**+3**

Contracts by type of work

Waterworks	$2.9	$150.6	$145.8	+3
Sewerage	10.3	260.3	179.9	+45
Bridges	20.2	460.4	249.8	+85
Highways	38.9	1,155.0	996.5	+16
Earthwork, Waterways	15.3	270.8	336.3	−19
Buildings:				
Pub. nonres.	33.9	1,095.9	2,298.2	−52
Housg., pub.	3.8	288.7	486.0	−41
Housg., priv.	20.4	2,374.3	1,922.3	+24
Commercial	14.9	811.6	394.0	+106
Industrial	120.4	1,832.7	1,724.4	+6
Unclassified	30.3	1,172.2	850.6	+38
Total	**$311.3**	**$9,872.5**	**$9,583.8**	**+3**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

New capital for construction

	Week of Aug. 6, 1953	Cumulative 33 Wks 1953	% chge 1952-53
Corporate securities	$471.5	$3,119.4	+25
State and municipal:			
Excluding housing	64.5	2,729.3	+31
Housing	0.0	212.8	+17
Federal aid	574.2	762.7	+39
Federal loans	0.2	83.0	−63
Total non-federal	**$1,110.4**	**$6,907.2**	**+25**
Federal approp.:			
In U. S.	$835.6	$1,532.7	−77
Outside U. S.	28.8	28.8	−84
Total new capital	**$1,974.8**	**$8,468.7**	**−32**

ENR indexes		1953	Base Years = 100 1913	1926	1949
Construction cost	Aug	611.87	294.13	128.27	
	Jul	604.10	290.39	126.64	
Building cost	Aug	437.05	236.26	124.24	
	Jul	435.28	235.19	123.73	
Volume	Jul	447	182	129	

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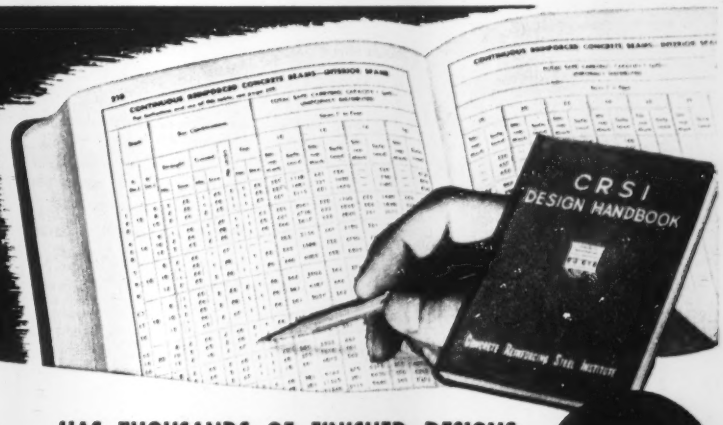

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OFFICIAL PROPOSALS

Excavation Work

NOTICE TO CONTRACTORS

Sealed Proposals for the construction of Contract No. 2 of the Village Creek Sewage Treatment Plant will be received by the Jefferson County Commission, Jefferson County, Alabama, at the Jefferson County Court House, Commission Chamber until 10:00 A.M. o'clock C.S.T. on September 22, 1953 at which time and place they will be publicly opened and read.

Plans, specifications, and contract documents are open to public inspection at the office of C. J. Rogers, County Engineer, Room 206, Courthouse, and at the offices of J. W. Goodwin Engineering Co., 2111 7th Ave. South, Birmingham, Alabama, or maybe obtained from J. W. Goodwin Engineering Company, upon deposit of $100.00. The full amount of deposit for one set of documents will be refunded (with deductions not exceeding the actual cost of the documents) upon return of all documents in good condition within three (3) days after the date of opening of bids.

The work to be constructed hereunder consists principally of the following approximate quantities:

PROPOSAL

36,000 C.Y. Special Excavation; 11,000 C.Y. Earth Excavation; 500 C.Y. Foundation Backfill; 22,000 C.Y. Rock Excavation; 1,500 C.Y. Slag Leveling Course; 500 C.Y. Class "B" Concrete; 1 L.S. Yard Piping; 1,500 C.Y. Slag Backfill for Pipe; 1,500 C.Y. Special Pipeline Excavation; 1 L.S. Plant Storm Sewer System; 1 L.S. Intercepting Storm Sewer; 1 L.S. Sanitary Sewer and Structures; 1 L.S. Air Supply System; 1,585 S.Y. Type "A" Waterproofing; 6,800 S.Y. Stabilized Macadam Base; 6,800 S.Y. Bituminous Plant Mix; 4,875 L.F. Combination Concrete Curb and Gutter; 700 S.Y. Concrete Sidewalk; 45,000 C.Y. Yard Leveling; 38,400 C.Y. Borrow Excavation; 12 Acre Ground Preparation, zone "B"; 5,000 C.Y. Slope Flushing Material; 3,600 C.Y. Loamy Topsoil for Zone "A"; 4,000 C.Y. Loamy Topsoil for Cut and Fill Slopes; 18.90 Acre Seeding; 3,500 M. Gal. Watering; 23,000 S.Y. Solid Sodding; 23,000 S.Y. Dry Rip-Rap; 23,000 S.Y. Grouted Rip-Rap; 4,750 L.F. Fence; 1 L.S. 40 M.G.D. Sewage Treatment Plant.

A Performance Bond will be required of the successful bidder in the amount of 100% of the contract price. A Labor and Material Bond will be required of the successful bidder in the amount of 50% of the contract price.

Attention of Bidders is called to the License required by Act No. 297 of General Laws of the Legislature of Alabama, approved September 2, 1935, entitled "An Act to Regulate the Licensing of General Contractors", and that it will be necessary for all persons submitting bids for work involving Ten Thousand Dollars or more to show satisfactory evidence of license as a general contractor. No Plans, specifications or proposal forms herein will be issued to other than licensed general contractors or their authorized agents.

Bids must be accompanied by a certified check or Bidder's Bond in an amount not less than five (5) percent of the base bid.

No bid may be withdrawn after the scheduled closing time for the receipt of bids for a period of sixty days.

The Owner reserves the right to reject any and all bids, and to waive informalities.

JEFFERSON COUNTY COMMISSION
By: W. D. Kendrick, President
Attest: T. S. Lucius, Chief Clerk
J. W. GOODWIN ENGINEERING CO.
2111 7th Avenue South
Birmingham, Alabama

Bids: August 21, 1953

Stadium Construction

Milwaukee County Park Commission,
Room 308, Courthouse

Sealed bids will be received at the office of the Milwaukee County Park Commission, Room 308, Courthouse, Milwaukee, Wisconsin, until 10:00 A. M., Friday, August 21, 1953, for providing all labor, material and equipment and for the construction and erection of extensions to the new Milwaukee County Stadium.

Separate bids will be taken for the General Work, (which includes piles, foundations and structural steel), Heating and Ventilating, Plumbing and Electrical.

A deposit of $25.00 shall be required for each set of plans taken from the office. The deposit shall be refunded if all plans and specifications are returned in good condition not later than ten (10) days after the opening of proposals.

Plans and specifications may be obtained in the office of the Regional Planning Department, Room 303, Courthouse after Monday, July 27, 1953.

MILWAUKEE COUNTY
PARK COMMISSION,
A. L. BOERNER,
General Manager

Bids: August 24, 1953

Alterations to Sewage Treatment Plant

"Sealed proposals for additions and alterations to the existing sewage treatment plant and approximately 7000 lin. ft. of trunk line and other sewers, will be received by the Village of Spring Valley, N. Y. at 3:00 P.M. on August 24th, 1953 and will be publicly opened and read.

Estimated cost $250,000.00.

Plans and specifications may be obtained at the Village Hall, 1 Municipal Plaza, Spring Valley, N. Y. between the hours of 9:00 A.M. and 5:00 P.M. A deposit of $10.00 will be required for each set of plans and specifications. The deposit will be refunded for each set returned in usable condition by the Village.

Olive C. Murray
Village Clerk"

Bids: August 27, 1953.

THE PORT OF NEW YORK AUTHORITY

Overhead Steam and Condensate Lines Between Buildings Nos. 23 and 24, Naval Industrial Reserve Shipyard, Port Newark, N. J.

CONTRACT O & M—188
PROPOSAL NO. 201

Sealed proposals for furnishing all labor, material and equipment necessary to install overhead steam and condensate lines between Buildings No. 23 and 24 at the Naval Industrial Reserve Shipyard, Port Newark, N. J., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on August 27, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 13, 1953

Bids: August 27, 1953.

THE PORT OF NEW YORK AUTHORITY

Heating Trench and Pavement Repairs, Hangars No. 3 and 5 LaGuardia Airport, Queens, N. Y.

CONTRACT O & M—201
PROPOSAL NO. 202

Sealed proposals for furnishing all labor, material and equipment necessary to repair pavement and heating trenches at Hangars No. 3 and 5 at LaGuardia Airport, Queens, N. Y., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on August 27, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 13, 1953

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4002) will be received at United States Courthouse, El Paso, Texas, until 10 a.m., MST, September 1, 1953, for furnishing labor and materials for Picacho South Dam, Las Cruces Division, New Mexico—Rio Grande Project. Location: 5 miles northwest of Las Cruces, Dona Ana County, New Mexico. Principal Items are: Excavation, 21,000 cu. yds.; dam embankment, 90,000 cu. yds.; and other work. Completion time 150 days. For particulars, address Bureau of Reclamation, El Paso, Texas; or Building 53, Denver Federal Center, Denver, Colorado.

W. A. DEXHEIMER, Commissioner

U. S. Government

Department of Commerce, Bureau of Public Roads, July 31, 1953. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D.S.T., AUGUST 28, 1953, for Project Ohio AA-13(2), Pike County, Ohio, 0.817 miles. Grading, draining, bituminous paving, and other work from Route Ohio 124 Relocation to A.E.C. Boundary. The approximate quantities of the more important items are: 16,000 cu. yd. Excavation for Borrow, 5,500 tons Limestone Base, and 2,700 tons Hot Asphalt Pavement. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above or Bureau of Public Roads, 920 South Jefferson Street, Roanoke, Virginia. H. J. Spelman, Division Engineer.

Department of Commerce, Bureau of Public Roads, July 28, 1953. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., D. S. T., SEPTEMBER 3, 1953, for Project 1D5-E5-F6, Baltimore-Washington Parkway, Prince Georges County, Maryland. 6.359 miles Concrete Paving and other work from point about ½ mile north of Good Luck Road to Laurel-Bowie Road. The approximate quantities of the more important items are: 44,800 cu. yd. Excavation, 2,800 tons Hot Asphalt Concrete Pavement, 180,000 sq. yd. Reinforced Cement Concrete Pavement, and 2,500 units of Seeding. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above. H. J. Spelman, Division Engineer.

OFFICIAL PROPOSALS

RATE: The rate for official proposal advertising is $1.50 per line (or fraction) per insertion.

COPY RECEIVED: Up to 10:00 A.M. Friday for issue out following Thursday subject to space open for last minute ads.

SEND COPY: To Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 18, N. Y.

OFFICIAL PROPOSALS

Bids: September 9, 1953

Ohio Turnpike

OHIO TURNPIKE COMMISSION

139 East Gay Street
Columbus 15, Ohio
NOTICE TO BIDDERS
Contract C-8
Contract C-9
Contract C-10
Contract C-8&9
Contract C-9&10
Contract C-8, 9&10

Sealed proposals will be received by the Ohio Turnpike Commission until 10:00 A.M., Eastern Standard Time, September 9, 1953, for the performance of each of the contracts enumerated above.

The work covered by Contract C-8 consists generally of the construction of grading, drainage, structures, and paving of approximately 4.69 miles in Construction Section 8 of Ohio Turnpike Project No. 1, beginning at a point about 1.75 miles northeast of Newton Falls near the Ravenna-Warren Road at Turnpike Centerline Station 215+00 in Trumbull County, and extending in a northwesterly direction to a point about 0.65 miles west of the Trumbull County line at Turnpike Centerline Station 1042+66 in Portage County, and the construction of an engineers' office building and facilities on or near the site of the work.

The work covered by Contract C-9 consists generally of the construction of grading, drainage, structures, and paving of approximately 4.61 miles in Construction Section 9 of Ohio Turnpike Project No. 1, beginning at a point about 0.65 miles west of the Trumbull County line, said point being the same as Turnpike Centerline Station 1042+66 in Portage County and extending in a westerly direction to a point about 5.25 miles west of the Trumbull County line and about 0.6 miles north of State Route No. 303 at Turnpike Centerline Station 799+78 in Portage County.

The work covered by Contract C-10 consists generally of the construction of grading, drainage, structures, and paving of approximately 4.6 miles in Construction Section 10 of Ohio Turnpike Project No. 1, beginning at a point about 5.25 miles west of the Trumbull County line and about 0.6 mile north of State Route No. 303 at Turnpike Centerline Station 799+78 in Portage County and extending in a westerly direction to a point about 0.5 mile west of the Limeridge Road at Turnpike Centerline Station 556+60 in Portage County, and the construction of an engineer's office building and facilities on or near the site of the work.

The work covered by Contracts C-8&9; C-9&10; and C-8, 9&10, which cover various combinations of Construction Sections 8, 9, and 10, is the construction as above generally described for the individual Construction Sections in each combination contract.

In Construction Section 8, the principal structures to be built are one reinforced box culvert, five single bridges, and six twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures). All of these brdiges are steel beam brdiges of from one to four spans each supported on reinforced concrete abutments and bents. The abutments of eight of the bridges are to be on steel piles, and the abutments of two of the bridges are to be on concrete piles, and the abutments of one bridge are to be on rock. The bents of five of the bridges are to be on steel piles, the bents of four of the bridges are to be on spread footings, and the bents of two of the bridges are to be on concrete piles.

In Construction Section 9, the principal structures to be built are one reinforced concrete box culvert, two single bridges, and three twin bridges (each twin bridge consisting of two separate but nearly identical and parallel structures). All of these bridges are steel beam bridges of from three to four spans each supported on reinforced concrete abutments and bents. The abutments of four of the brdiges are to be on steel piles and the abutments of one bridge are to be on rock. The bents of three of the bridges are to be on spread footings and the bents of two of the bridges are to be on steel piles.

In Construction Section 10, the principal structures to be built are one reinforced concrete box culvert, and five single bridges. All of these bridges are steel beam bridges of four spans each supported on reinforced concrete abutments and bents. The abutments of all of thee bridges are to be on steel piles. The bents of one bridge are to be on spread footings and the bents of four of these bridges are to be on steel piles.

Approximate quantities of the major items of construction for Contract C-8 are as follows:

Roadway Excavation	655,000 cubic yards
Borrow	1,937,000 cubic yards
Structural Concrete	13,300 cubic yards
Reinforcing Steel	1,882,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	3,220,000 pounds
Concrete Bearing Piles	28,000 lineal feet
Steel Bearing Piles	25,000 lineal feet
10" Reinforced Concrete Pavement	149,000 square yards

Approximate quantities of the major items of construction for Contract C-9 are as follows:

Roadway Excavation	1,024,000 cubic yards
Borrow	129, cubic yards
Structural Concrete	6,200 cubic yards
Reinforcing Steel	674,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	902,000 pounds
Steel Piling	7,000 lineal feet
10" Reinforced Concrete Pavement	125,000 square yards

Approximate quantities of the major items of construction for Contract C-10 are as follows:

Roadway Excavation	990,000 cubic yards
Structural Concrete	3,200 cubic yards
Reinforcing Steel	472,000 pounds
Fabricated Structural Steel (excluding furnishing and fabrication)	770,000 pounds
Steel Piling	7,000 lineal feet
10" Reinforced Concrete Pavement	130,000 square yards

For each Contract, fabricated and structural steel and structural expansion and/or contraction joints will be furnished by the Commission.

These Construction Sections have been twice previously advertised. Proposal forms, Plans, Cross Sections, and Special Provisions for each of Contracts C-8, C-9 and C-10 as formerly advertised are now obsolete (except that the Plans and Cross Sections for the proposed July 15, 1953 letting remain the same for this letting and are applicable to these contracts). Any person who obtained any of these documents pursuant to any of the former advertisements and desires to bid for said Construction Sections must obtain a new set of Contract Documents (with the foregoing exception) for the letting advertised in this notice. However, he need not obtain a new set of General Specifications or of those Supplemental Specifications already in his possession and applicable to any or all of these Contracts, as indicated in the Special Provisions comprising a part of the new Contract Documents.

Copies of the Plans and General Specifications for said Contracts are immediately available for public inspection or purchase at the office of the Chief Engineer, Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. These documents may be purchased from said chief engineer for the following sums, per set, which sums are non-returnable:

General Specifications for Ohio Turnpike Project No. 1	$ 5.00
Plans (also soil profiles and boring logs), per set, per construction section	15.00
Cross Sections, per set, per construction section	25.00

Forms or copies of all remaining Contract Documents, including Proposals for each of the Contracts set forth above; the Affidavit which must accompany any such Proposal; this Notice to Bidders; the Special Provisions applying to said Contracts; the Contract to be entered into with the (or each) successful Bidder; and the Contract Bond to be furnished with such Contract, will be furnished upon request and without charge to any interested person at the aforesaid Chief Engineer's office on and after August 14, 1953.

All Proposals must be on the form prescribed by the Commission and must comply with the terms and conditions set forth in the Contract Documents.

Each Proposal must be accompanied by a certified check or checks on a solvent bank or banks, payable to the order of the Ohio Turnpike Commission in an amount not less than $100,000 per Construction Section covered by the Contract on which the Bidder bids. If the Bidder shall tender bids for more than one Contract, said amount shall be not less than $100,000 per Construction Section covered by the Contracts on which he shall tender Proposals; provided, however, that if one or more Construction Sections are included in more than one Contract for which the Bidder shall tender Proposals, the Bidder need furnish only $100,000 per each such section, notwithstanding such duplication. The Commission may at any time cash any such check. Each such check or the proceeds thereof will be held by the Commission as a guaranty that, if any Proposal guaranteed thereby is accepted, a Contract will be entered into and the performance of the Proposal secured.

Each such check or the proceeds thereof will be returned or forfeited as provided in paragraphs G-3.03 and G-3.06 of the aforesaid General Specifications, provided that if there be a forfeiture, it shall be of an amount equal to $100,000 per Construction Section covered by the Proposal with respect to which the forfeiture occurs, and any excess will be returned to the Bidder.

All bids must be received at or before 10:00 A.M., Eastern Standard Time, September 9, 1953, in the offices of the Ohio Turnpike Commission, 139 East Gay Street, Columbus 15, Ohio. At said hour, the bid box will be removed to the Neil House Hotel, 41 South High Street, Columbus, Ohio, where all Proposals will be publicly opened and read.

The award of any of the above-enumerated Contracts, if any award be made, will be to the Bidder or Bidders whose Proposal or combination of Proposals is lowest and best for the performance of the work, taken as a whole, and complies with all the prescribed requirements. The Commission reserves the right to reject any or all Proposals and to waive technicalities.

OHIO TURNPIKE COMMISSION

Bids: August 27, 1953.

THE PORT OF NEW YORK AUTHORITY

Repairing and Seal Coating of Apron, Teterboro Airport, Teterboro, N. J.

CONTRACT O & M—181
PROPOSAL NO. 203

Sealed proposals for furnishing all labor, material and equipment necessary for repairing and seal coating of the apron in the rear of Buildings No. 9 and 10 at Teterboro Airport, Teterboro, N. J., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on August 27, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, August 13, 1953

Bids: August 27, 1953.

THE PORT OF NEW YORK AUTHORITY

Replacement of Skylights Building No. 103 Port Newark, N. J.

CONTRACT O & M—196
PROPOSAL NO. 204

Sealed proposals for furnishing all labor, material and equipment necessary to replace skylights at Building No. 103, Port Newark, N. J., will be received at the office of the Director of Purchase of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on Thursday, August 27, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

New York, August 13, 1953

Make Plans Accessible to Distant Bidders

Plans and specifications for inspection by distant bidders may be filed at any of **Engineering News-Record** offices without charge. Or a sufficient supply may be deposited at such of our offices as seem desirable subject to your usual requirements in the matter of deposits, etc. (We assume full responsibility for return of plans or collection and return of deposits).

OFFICIAL PROPOSALS

Bids: August 19, 1953

Construction of Trunk Sewer No. 4 Pine Street to South Avenue Contract No. 1 City of Poughkeepsie, Dutchess County, New York

Sealed bids for Contract No. 1, Pine Street to South Avenue for the construction of a Sanitary Sewer will be received by the Commissioner of Finance, City Hall, Poughkeepsie, New York until 10:00 A.M. Daylight Saving Time, Wednesday, August 19, 1953 and there at said office and at said time will be publicly opened and read aloud.

Contract No. 1, Pine Street to South Avenue, includes the construction of approximately 4,065 linear feet of 24-inch to 33-inch diameter sewers and appurtenances.

Plans and Documents may be examined at no expense at the office of the Commissioner of Finance, City Hall, Poughkeepsie and copies of the same obtained there upon payment of $10.00 for each set. Any bidder upon returning said set in good condition within 30 days of the date of receiving bids will be refunded his payment, and any non-bidder upon so returning said set will be refunded $5.00.

The Plans and Documents may be examined in the office of the Superintendent of Public Works, Eastman Park, Poughkeepsie, New York or at the office of O'Brien & Gere, Consulting Engineers, 204 East Jefferson Street, Syracuse, New York.

Each bid must be accompanied by security in amount not less than five per centum (5%) of the amount of the bid in the form and subject to the conditions provided in the Information for Bidders contained in the Contract Documents.

The right is reserved to waive any informalities in the bids and to reject any or all bids.

DEPARTMENT OF FINANCE OF THE CITY OF POUGHKEEPSIE
By: AUBREY B. COONS
Aubrey B. Coons
July 29, 1953 Commissioner of Finance

Bids: September 18, 1953

Improvements to Sanitary Sewerage System

Sealed bids will be received by the Salisbury Incinerator and Sewage Treatment Plant Commission at the City Hall, Salisbury, Maryland, until 2:00 P.M., E.D.T., Friday, September 18th, 1953, for furnishing all labor, materials, and equipment and performing all work necessary for the construction of proposed improvements to Salisbury's sanitary sewerage system in accordance with the following schedules:

Schedule A. All work in connection with the construction of the trunk and related lateral sewers; north side pumping station and force main; part of plant effluent line; chlorine contact tank; and outfall sewer.

Schedule B. All work in connection with the construction of the south side pumping station and force main; water main extensions; and units of the treatment plant required for primary treatment, namely, the detritor, clariflocculator, sludge digesters, sludge drying beds, and control building.

Schedule C. All work in connection with the construction of the secondary treatment units, namely, the biofilters and final clarifier.

Schedule D. All work in connection with the construction of Schedule A and Schedule B on an all or none basis.

Schedule E. All work in connection with the construction of Schedule A, Schedule B, and Schedule C on an all or none basis.

Copies of the contract documents may be examined at the office of Col. Ernest L. McLendon, Executive Secretary to the Mayor of Salisbury, located in the City Hall, or may be obtained from the office of Clarke Gardner and Percy Sterling, Consulting Engineers, Calvert and Bond Streets, Salisbury, Maryland, upon deposit of $35.00 for each set. If the documents are returned in good order within 15 days after the opening of bids, the full amount of the deposit for one set will be returned to each actual bidder. The deposits of actual bidders for additional sets, and of non-bidders of all categories will be refunded with a deduction of $25.00 per set to defray the reproduction cost of the documents. No deposit or any portion thereof will be refunded if the documents are not returned within the time stated.

To be considered, bids must be submitted on the basis of Schedule A and/or Schedules B and C. Bidders may bid on Schedules D and/or E at their option.

Each bid under Schedule A and/or Schedules B and C must be accompanied by a certified check or bid bond in an amount not less than 5% of the total of the schedule or schedules bid. If the bidder elects to submit a bid under Schedule D and/or Schedule E, a certified check or bid bond in an amount not less than 5% of the total of the highest schedule bid must be furnished; but, under these circumstances, no certified check or bid bond will be required for Schedules A and/or B and/or C.

An approved surety bond in the amount of 100% of the contract price will be required from the successful bidder or bidders to insure the faithful performance of the work.

No bidder may withdraw his bid within 45 days after the actual date of the bid opening.

The Commission reserves the right to consider informal any bid not prepared and submitted in accordance with the provisions of the contract documents, and may waive any informalities in or reject any and all bids.

SALISBURY INCINERATOR AND SEWAGE TREATMENT PLANT COMMISSION
Fred A. Grier, Jr., Chairman
August 4th, 1953

Bids: August 31, 1953

Resurfacing and Seal Coating New York International Airport

THE PORT OF NEW YORK AUTHORITY
CONTRACT O&M-208
PROPOSAL NO. 197

Sealed proposals for furnishing all labor, material and equipment necessary for resurfacing and seal coating at New York International Airport, Jamaica, N. Y., will be received at the office of the Department of Purchase & Administrative Services, The Port of New York Authority, Room 906, 111-8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on August 31, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Department of Purchase & Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase & Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

Bids: September 1, 1953

Highway Construction

REPUBLIC OF LIBERIA
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
DIVISION OF HIGHWAYS
MONROVIA, R. L.

STANDARD GOVERNMENT FORM OF INVITATION FOR BIDS. FORM NO. 20.

SEALED BIDS, in single copy only, subject to the conditions contained herein, will be received until 11 o'clock A.M., Monrovia time, on the 1st. day of September, 1953, and then publicly opened at that time, at the office of the Secretary of the Department of Public Works and Utilities, for furnishing the materials and performing the work for constructing the Liberia, Monrovia-Kakata Project 1-B in Montserrado County, R. L. Telegraphic bids will not be accepted. Bids received after the above time and date will not be considered. The length of the Project is 23.375 miles, and the items of work are approximately as follows:

20(1)	Clearing and Grubbing	160 Acres.
24(1)	Unclassified Excavation, (of which approximately 35,000 cu. yds. are solid rock.)	535,000 Cu. Yds.
25(1)	Unclassified Excavation for Structures	5,000 Cu. Yds.
27(2)	Overhaul. (1000-ft. Freehaul	605,000 Sta. Yds.
30(1)	Foundation Fill	425 Cu. Yds.
37(1)	Furrow Ditches	73,000 Lin. Ft.
38(1)	Obliteration of Old Roadway	685 Units
45(1)	Watering Embankments	17,000 Units
45(5)	Provide Water Plant	Lump Sum
46(1)	Rolling of Embankment	2,700 Hours
46(5)	Provide Rollers	Lump Sum
47(1)	Rolling Base Course	950 Hours
51(1)	Stabilized Soil Base Course	127,000 Cu. Yds.
110(7)	Bituminous Prime Coat, Emul. Asphalt	138,000 Gal.
112(2)	Blotter Mtl. for Bitum. Preserv. Trtmt.	6,200 Cu. Yds.
112(16)	Emul. Asphalt for Bitum. Preserv. Trtmt.	184,500 Gal.
206(1)	Concrete, Class A.	1,600 Cu. Yds.
206A(6)	Concrete, Class Y	5 Cu. Yds.
207(1)	Reinforcing Steel	152,000 Lbs.
221(1)	Clean, Paint Struct. Steel in place	Lump Sum
249(1)	Concrete Block Headwalls	335 Cu. Yds.
250(1)	18" Std. Str. Reinf. Conc. Pipe Culvert	1,263 Lin. Ft.
250(2)	24" Std. Str. Reinf. Conc. Pipe Culvert	2,739 Lin. Ft.
250(3)	30" Std. Str. Reinf. Conc. Pipe Culvert	540 Lin. Ft.
250(4)	36" Std. Str. Reinf. Conc. Pipe Culvert	2,928 Lin. Ft.
250(5)	48" Std. Str. Reinf. Conc. Pipe Culvert	162 Lin. Ft.
323(1)	Grouted Rubble Gutter	2,200 Sq. Yds.
406(1)	Reinforced Concrete Slope Pavement	330 Sq. Yds.

The Government of the Republic of Liberia through the Department of Public Works and Utilities will furnish, at established rental rates, any available government-owned construction equipment on hand for use at the contractor's option. Rental accruing to the Government may be deducted from partial payments made to the contractor. Small tools, drill steel, bits, etc. are to be furnished by the contractor. Nothing in this Invitation, or in the Contract, shall preclude the use by the contractor of his own equipment.

The Government will permit the contractor to import duty free, any supplies or materials incorporated in the work, or equipment used on the work. The contractor will furnish all materials and supplies incorporated in the work unless specific mention is made in the Special Provisions or Invitation to the contrary. Supplies or materials not of Liberian or United States origin or manufacture shall not be used on this project without the written consent of the Secretary of the Department of Public Works and Utilities. Preference of employment in all categories shall be given to qualified Liberian and United States citizens, but only Liberian citizens may be employed as Unskilled Labor, except upon written permission of the Secretary of the Department of Public Works and Utilities. Any qualified firm, company, partnership, corporation or individual may submit a bid to perform this work, regardless of where incorporated or licensed, however, before an award will be made, the bidder must be incorporated in either Liberia or the United States. If the bidder is not incorporated in Liberia or the United States at the time of opening of bids, and becomes the low bidder, and is otherwise qualified to receive the award, the bidder must become incorporated either in Liberia or the United States within thirty (30) days of the date on which the Secretary of the Department of Public Works and Utilities issues notice of intent to award.

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4009) will be received at Ephrata, Washington, until September 10, 1953, for furnishing labor and materials for earthwork and structures, West Canal, Station 3257/62 to Station 4512/90; and Goose Lake Wasteway, Station 0/00 to Station 45/77.37, Columbia Basin Project, Washington. Location: Northwest of Othello, Washington. Principal items are: 759,000 cu. yds. excavation; 1,620 cu. yds. concrete; 2,500 lin. ft. concrete pipe; 14 radial gates and hoists, 48,000 lbs. slide gates and metalwork; and other work. Completion time 450 days. For particulars, address Bureau of Reclamation, Ephrata, Washington; or Building 53, Denver Federal Center, Denver, Colorado.

W. A. DEXHEIMER, Commissioner

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4007) will be received at Friant, California, until September 9, 1953, for furnishing labor and materials for earthwork and structures, laterals and sublaterals, North Section—Unit No. 3, Part 2, Madera Distribution System, Central Valley Project, California. Location: Northwest of Madera, California. Principal items are: 382,000 cu. yds. excavation; 140,000 cu. yds. earth lining; 1,060 cu. yds. concrete in structures; 6,900 lin. ft. concrete pipe, 18- to 54-inch diameter; 22,700 lbs. gates and miscellaneous metalwork; and other work. Completion time 210 days. For particulars, address Bureau of Reclamation, Friant, California; or Building 53, Denver Federal Center, Denver, Colorado.

W. A. DEXHEIMER, Commissioner

OFFICIAL PROPOSALS

Bids: August 20, 1953

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, Public Buildings Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 20th day of August 1953, by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. Nickerson, District Engineer, 353 Broadway, Albany, New York				
Rensselaer	R.C. 53-105	Various Highways in Rensselaer County	....	Removal of 187 Trees	$700 Plans $10	$13,000
Schenectady	M. 53-2	Barge Canal Dams No. 4 & 5, Scotia and Rotterdam	....	Replacing Movable Dam Gates and Misc. Work.	$3,800 Plans $10	68,090
		DISTRICT No. 4				
		E. G. Youngman, District Engineer, Barge Canal Terminal, Rochester 1, New York				
Monroe	FASS 53-8	Edgemere Drive (Co. Rd.) Project S-289(1) Cont. 2	0.74	Bit. Mac. Pen. Meth. (Hot Asph.) R.C. Slab Br. (Twin Box) 51.6'	$10,000 Plans $10	173,000
		DISTRICT No. 5				
		C. R. Waters, District Engineer, 65 Court Street, Buffalo, New York				
Chautauqua	FAC 53-16	City of Jamestown: East Fourth St. & East Second Street (Pendergast Avenue to Winsor Street) Project U-449(6)	0.45	Asp. Conc. Ty. 2A=0.43 Mi. Misc. Work=0.02 Mi.	$10,000 Plans $10	185,000
Chautauqua	FASH 53-12	Water Street: Village of Fredonia Project F-426(4)	0.13	Asp. Conc. Ty. 1A, Opt.	$900 Plans $10	16,000
Niagara	FASS 53-9	Loveland Road (Co. Rd. 13A) Project S-236(3)	0.64	Bit. Mac. Ty. 1 Pen. Meth.	$2,100 Plans $10	36,000
		DISTRICT No. 6				
		J. H. Thomas, District Engineer, 30 West Main Street, Hornell, New York				
Chemung & Schuyler	FARC 53-95	Alpine-Cayuta Ft. 2 and Cayuta-Swartwood Pts. 1 & 2, S.H. 8242; Cayuta-Swartwood Pt. 2, S.H. 1915 Project F-400(3)	8.37	Asp. Conc. Ty. 1A, Opt.	$35,000 Plans $15	638,000
		DISTRICT No. 8				
		J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, New York				
Orange	C.T. 53-11 S.T. 53-27 R.C. 53-106	New York State Thwy.—Catskill Sect.—Sub. 6 Harriman-Newburgh); Harriman Interchange; West Point-Central Valley S.H. 5328-B; Newburgh-Woodbury S.H. 42; Chester-Vails Gate S.H. 154; Newburgh-Campbell Hall, S.H. 153 & 16 Town or County Cross Roads	6.42 Acc. 14.26 Thy.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide=16.74 Mi.; Asp. Conc. Ty. 1A, Opt.=3.23 Mi., Cal. Chl. Tr. Grav.=0.71 Mi.; 9 Hy. Seps. Comp. I-Beam 220.8' 217.5', 46.8', 187.4', 192.9', 242', 253.6', 69.3' & 48'; 1 Hy. Sep. I-Beam & Girder 110.4', 1 Br. Comp. I-Beam 192.7', 1 Br. Twin Box 40', 1 R.R. Sep. R.C. Rigid Frame 44.4', 3 R.R. Seps. Comp. I-Beams 231', 157.5' and 219'	$858,000 Plans $100	$15,697,000
Rockland	H.T. 53-8 S.T. 53-29 R.C. 53-109	New York State Thwy.—Hudson Sect.—Sub. 8, (Suffern-Nyack); Spring Valley-Suffern S.H. 9000; Spring Valley-Knapps Cors. S.H. 689; 8 Misc. Cross Roads & Erie Railroad Relocation	3.17 Acc. 4.84 Thy.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide=6.54 Mi.; Asp. Conc. Ty. 1A, Opt.=1.04 Mi.; Erie R.R. Reloc. =0.43 Mi.; Hy. Sep. I-Beam 36.6'; 7 Hy. Seps. Comp. Beams 198.9', 302.6', 152.8', 71.9', 200', 206.3' & 243'; 2 R.R. Septs. Comp. I-Beams 148', & 233'; 1 Br. R.C. Twin Box 26'	$450,000 Plans $100	7,506,000
Westchester & Putnam	TSP 53-2 BMSP 53-1	Taconic State Parkway Bear Mount State Parkway	4.36	Replacing Rustic Timber G.R.	$4,000 Plans $10	67,000
Westchester	R.C. 53-107	Ossining Village S.H. 5482-1890 Ossining Village Connection, S.H. 9266	0.70	Asp. Conc. Ty. 1A, Opt.	$1,500 Plans $10	84,000
Westchester	FASWC 53-2 FAST 53-28 HT 53-7	New York State Thwy.—Southern West. Connection —Sub. 11 (N.Y.C. Line-Tuckahoe Rd.); Tuckahoe Rd. Interch.; Hudson Sect.—Sub. 10 (Tuckahoe Rd.-Tarrytown) and 5 Secondary Cross Roads Project UI-1100(1) Cont. 1	1.82 Acc. 1.39 Thy.	9" Cem. Conc. Pavt. 2 @ 25' Var. Wide=2.81 Mi.; Asp. Conc. Ty. 1A, Opt.=0.30 Mi.; T.C. Graded Gravel B.D.S.T.=0.10 Mi. 2 H.G.S. Comp.I Beams 132' & 168'	$202,000 Plans $50	$3,675,000
		DISTRICT No. 9				
		F. W. Donovan, District Engineer, 71 Frederick St., Binghamton, New York				
Schoharie	FARC 53-108	Richmondville-Summit, S.H. 1234 Project F-363(6)	2.05	Asp. Conc. Ty. 1A, Opt.	$20,000 Plans $10	340,000
		DISTRICT No. 7				
		R. W. Sweet, District Engineer, 444 Van Duzee St., Watertown, New York				
St. Lawrence	FARC 53-79	Morristown-Hammond Pt. 2, S.H. 970A Project F-650(3)	0.68	Asp. Conc. Ty. 1A, Opt	$6,000 Plans $10	114,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

Bids: August 25, 1953

Parkway Construction

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Department for:

PALISADES INTERSTATE PARKWAY, SECTION 1-J

Palisades Interstate Parkway, Section 1-J, from Station 515+0 to New York State Line, Grading and Paving, Borough of Alpine, Bergen County. Length 1.476 miles. The principal items of construction are:

Estimated:
30,562 cu. yds. Roadway Excav.—Earth
178,547 cu. yds. Roadway Excav.—Rock
8,526 cu. yds. Wet Excavation
354,631 cu. yds. Borrow Excavation
4,000 cu. yds. Rock Excav.—Subsurface Structures
21,025 cu. yds. Subbase
36,177 sq. yds. Stabilized Turf Shoulders
50,991 sq. yds. Macadam Base Course 8" thick
49,754 sq. yds. Pavement, Type MA-BC-2, 3" thick
2,190 sq. yds. Conc. Pavement Surf., Rein. 10" thick
8,755 lin. ft. Rein. Concrete Pipe
3,014 lin. ft. Corrugated Metal Pipe
160 lin. ft. 65"x40" Corrugated Metal Pipe Arch
78 Inlets and Manholes
23,083 lin. ft. White Concrete Curb
10,108 lin. ft. Rough Cut Timber Guard Rail

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J., on Tuesday, August 25, 1953, at ten o'clock (10:00 A.M.—EASTERN STANDARD TIME), eleven o'clock (11:00 A.M.—DAYLIGHT SAVING TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statment and statement of plant and equipment with their bid.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, New Jersey, and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000, and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: A. Lee Grover, Chief Clerk
State Highway Department

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:
(Not available for equipment advertising)
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY WANTED undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION:
BOX NUMBERS count as 1 line additional in undisplayed ads.
DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).
EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:
The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.
AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. E.N.R.

Send NEW ADVERTISEMENTS: To New York City Office, 330 W. 42nd St., N. Y. 36 for August 27th issue closing August 17th

ENGINEERS AND DESIGNERS

With experience applicable to Oil Refinery, Blast Furnace or Steel Plant Design.

Openings available at our Cleveland, Ohio offices for:

Piping Designers
Structural Designers
Concrete Designers
Pressure Vessel Designers
Instrument Specifications Engineers
Equipment Specifications Engineers

These openings offer:

Top Hourly Rates
Permanent Positions
Overtime—45 hour week
No Age Limitations

Write, giving complete background and experience to:

ARTHUR G. McKEE & CO.
2300 Chester Ave.
CLEVELAND 1. OHIO

WANTED
Resident Manager
Overseas
(Pacific)

Must be capable of handling all phases of construction on a complex project. Administrative ability in operation procedures, methods & control reports. Complete management of project during Project Manager's absence.

Forward complete resume and starting salary desired. Replies held in strict confidence. Box P-8503, Engineering News-Record 1111 Wilshire Blvd., Los Angeles 17, Calif.

REPLIES: Box No.: Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

CONSTRUCTION SUPERINTENDENT — Age 30-40 with minimum of 10 years experience in industrial and commercial construction. Complete charge of field activities of small (75 employees) long established general contractors. Give full particulars in application. Salary open. Location in Southeastern Pennsylvania. P-8518, Engineering News-Record.

HIGHWAY AND Bridge Engineers, Designers and Draftsmen—to fill positions with growing permanent organization located in Baltimore, Maryland, currently engaged on large highway and bridge projects. Must be experienced in expressway design. Attractive salaries with unlimited opportunities. Submit complete resume of education, experience, salary expectations and availability with first letter. J. K. Knoerle Consulting Engineers, Inc. 607 St. Paul Street, Baltimore 2, Maryland.

WANTED PLANT Supt by established Southern manufacturer of Structural Precast Concrete Products. Specializing in Floor and Roof systems. Annual Sales well over one million dollars. State age, experience, availability, salary and full particulars first letter. P-8706, Engineering News-Record.

ESTIMATOR OR Cost Engineer, age 35 to 45, graduate of recognized university, with 10 years practical experience, preferably hydro-electric projects. Supervisory position, with small staff, reporting and analysing costs of jobs, assisting in preparation of estimates, budgets, etc. Location Sao Paulo, Brazil, with frequent trips to construction camps in area of Sao Paulo and Rio de Janeiro. Apply Dept. NP, Canadian-Brazilian Services Limited, Gerrard Building, Toronto, Canada.

WANTED—ASSISTANT to Municipal Engineer. Salary Open. Write stating qualifications, etc., to P.O. Box 349, Scotch Plains, N. J.

WANTED—SEWER Foreman, experienced. Big job and high wages. E. A. Meyer Const. Co., 1539 Morrow Ave., North Chicago, Ill.

SALES ENGINEER to represent large manufacturer of construction material used in highways, airfields and sewers. Contacting consulting, highway and sanitary engineers, distributors and contractors. A good opportunity is available for the qualified man. Give complete background and experience. P-8753, Engineering News-Record.

VALUATION ENGINEER—Wanted by large corporation operating nationally, for establishing and maintaining insurable values of its various plants. Permanent staff position. Location Northeastern Ohio. Salary open. Reply P-8749, Engineering News-Record.

(Continued on opposite page)

SALES ENGINEER REQUIRED

Established firm supplying heavy steel products to railroads has opening for a man experienced in contacting purchasing and engineering departments of railroads. Successful previous experience essential. Excellent opportunity with growing concern. Salary open. Submit record. Reply held confidential.

PS-8786, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

DISTRIBUTORS WANTED

Materials for Concrete Construction
Air Entraining—Membrane Curing Compounds
Asphalt Coatings—Concrete Hardners
Emulsified Carbon Black—Waterproof Coatings
RW-8823, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ESTIMATORS

Fully experienced in industrial and commercial buildings and mechanical installations (machinery, equipment, piping, etc.)

These openings in Cleveland Office offer excellent working conditions with paid vacations, sick leave and participating group insurance program. Presently working scheduled 5 day 45 hour work week.

Replies will be treated confidential and arrangements will be made to interview selected applicants. Please submit complete resume stating experience, education, salary required and date available to

THE H. K. FERGUSON COMPANY
Engineers and Builders
Ferguson Building Cleveland 14, Ohio

STRUCTURAL ENGINEERS

To do bridge designing for a $7,000,000 bridge construction program. Beginning salary for positions are $5100 and $5900 ranging to $6500.

For details and application blank, write

CITY SERVICE COMMISSION
City Hall Milwaukee, Wis.

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

WANTED
CONSTRUCTION SUPERINTENDENT

Experienced on heavy Highway and Railroad Bridge Construction, on the Multi-Million Dollar Expressways in the Detroit Area. Applicant must be strictly a job pusher, with successful background, experience and sobriety.

F. C. ATLETWED
Box 175 St. Clair, Mich. or call Detroit Tyler 8-2101

WANTED
BRIDGE SUP'T.

Vicinity—Trenton. 1st rate only. State experience, when available & salary.

P-8793, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

(Continued from opposite page)

CHIEF OF Party—Must be capable of handling survey parties and have thorough understanding of survey work pertaining to rights of way, curb and street lines, sanitary and storm sewer surveys, and general survey work. Apply—Howard Madison, Township Engineer, 1 Main Street, Woodbridge, N. J. Phone WO 8-1200, Extension 7.

TRANSIT MAN—For inside and outside work. Must have thorough knowledge of engineering, drafting and calculating, and be thoroughly familiar with deed and conveyance, and tax map work. Apply—Howard Madison, Township Engineer, 1 Main Street, Woodbridge, N. J. Phone Wo 8-1200, Extension 7.

WANTED — EXPERIENCED estimator for building construction for long established Pittsburgh Contracting Company. Good opportunity for advancement. Reply to P-8750, Engineering News-Record.

WANTED — MECHANIC, familiar with all types of heavy road equipment. Some ability to operate same. Work in central New York. Good opportunity for right person. Write P-8809, Engineering News-Record.

GRADE FOREMAN — Familiar with rock, heavy excavation. Good opportunity. Work in Central New York State. Experience, references. P-8810, Engineering News-Record.

CARPENTER FOREMAN—Familiar with all types of bridge work. Good opportunity with good concern. P-8811, Engineering News-Record.

WANTED—CONSTRUCTION Superintendent—Must have experience in construction of gas transmission and distribution systems. P-8707, Engineering News-Record.

ASPHALT PAVING Engineer experienced in Laboratory & Field control procedures. Overseas assignment for approximately 12 months. If interested advise age, salary desired & experience. P-8643, Engineering News-Record.

SELLING OPPORTUNITIES OFFERED

SALES ENGINEERS—Albany, New York and Pittsburgh, Pennsylvania with established national concern selling prefabricated metal products to engineering and construction markets. Position offered is permanent and presents excellent future with aggressive, progressive and expanding organization. Engineering degree desirable. Previous sales experience unnecessary. Age 24 to 30. SW-8254, Engineering News-Record.

MANUFACTURER'S AGENTS wanted for territories in North Central United States to handle steel and aluminum railings for bridges and buildings. All territories open. Agent must carry allied lines. Write or call: National Railing Corporation, 4319 West 32nd Street, Chicago 23, Illinois. Phone LAfayette 3-1633.

SALES AGENCY offered to man now con tacting architects and industrials for product specifications. This proven item in the construction line now successfully handled as sideline by such persons. $250,000 yearly potential in industrial areas. Straight 5% commission with complete protection. Liberal manufacturer aid via published advertising and direct mail. Many choice territories still available. RW-8736, Engineering News-Record.

To EMPLOYERS Who Advertise for MEN:

Frequently, when there are many applicants for a position, only the most promising letters are acknowledged. The other applicants never know whether their letters reached a prospective employer or not. These men often become discouraged, will not respond to future advertisements and even question their bona fide character.

Every Advertisement Printed in the Searchlight Section Is Duly Authorized. You can help keep our readers interested and get better returns to your advertising in this section if you acknowledge each reply—in plain envelopes, if you wish.

Classified Advertising Division

McGRAW-HILL PUBLISHING CO., INC.

"Put Yourself in his place."

SELLING OPPORTUNITY OFFERED

SALES REPRESENTATIVES: to sell line of temporary heating units to construction equipment distributors. Units are used throughout construction and industry, all parts of the country. Write giving territory covered and other lines handled. RW-8776, Engineering News-Record.

EMPLOYMENT AGENCIES

WANTED ENGINEERS, Designers, Draftsmen, Structural, Piping, M.E., C.E., E.E., and Industrial, also Teachers and Chemists, Cleveland Engineering Agency, 2132 E. 9, Cleveland.

POSITIONS WANTED

WATER AND Sanitary Engineer. Design, construction and operation. Water Waste Surveys, pump and meter tests. Have equipment for hydraulic measurements and tests. Graduate, registered, 30 years experience. PW-8816, Engineering News-Record.

GENERAL CARPENTER Foreman reinforced concrete, 19 years experience, 5 years foreign. PW-8800, Engineering News-Record.

EXECUTIVE ACCOUNTANT, presently employed desires position as Controller or equivalent in foreign construction field. Age 47, B.B.A. degree, bilingual (English-Spanish), 25 yrs. heavy experience including 7 yrs. foreign and 7 yrs. Government contracts. Excellent qualifications and references. Available 30 days notice. PW-8774, Engineering News-Record.

PROJECT MANAGER Or General Supt. Age 45, graduate civil engineer. Last twelve years Gen'l Supt. Highway & turnpike construction, grading, drainage, bridges, paving, including air base and Hydro-Electric Dams, with Appurtenance structures. Prefer work in Ohio, New York, New Jersey or Penna. Thoroughly experienced. Cost conscious, excellent references. Presently employed, available August first. PW-8691, Engineering News-Record.

RESEARCH ENGINEER P.E. 25 years experience. Speciality building materials, light frames and shelters. Headed structural department 10 years. Location N. Y. City and Northern N. J. Immediately available. PW-8758, Engineering News-Record.

Available IN sixty days. Construction Superintendent for highway work, drainage, irrigation or levee work. Over twenty years experience. Can supervise, plan, and handle work of this kind on the project level. Knowledge of Engineering and thoroughly familiar with government contracts. Prefer Southern California or Arizona. Can also bring Master Mechanic who is thoroughly familiar with repairing of all makes of draglines and crawler equipment. Mechanic has his own tools. PW-8770, Engineering News-Record.

ESTIMATOR-ADMINISTRATIVE Ass't.—Age 40, now employed. 18 yrs. experience estimating, field engineering & supervision, purchasing, expediting and drafting. Mid-Atlantic or Pacific N.W. preferred. PW-8742, Engineering News-Record.

ENGINEER, REG. P.E. Reports, of contractors' claims. 45 years experience. Design, construction. Turnpikes, tunnels, buildings, foundations, etc. PW-8746, Engineering News-Record.

GENERAL SUPERINTENDENT 25 years diversified heavy construction experience. Good background, know men and equipment. Available any location immediately. PW-8549, Engineering News-Record.

GENERAL SUPT. 25 yrs. extensive experience in heavy construction blasting hard rock—earth moving & concrete. PW-8732, Engineering News-Record.

BUSINESS OPPORTUNITY

Engineer seeks partner to establish general construction business or consider partnership in existing firm. BO-8738, Engineering News-Record.

Engineers—Foremen—Office Men

Learn latest methods to organize and run work. Prepare for the top jobs.

Send post card for details.

GEO. E. DEATHERAGE & SON CONSTRUCTION CONSULTANTS

411 So. 5th Ave. Lake Worth, Florida

STRUCTURAL ENGINEERING

ARCHITECTURAL ENGINEERING

OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-third year.

WILSON *Engineering Corp.*

College House Offices HARVARD SQ. CAMBRIDGE, MASS

MECHANICAL ENGINEER

GRADUATE

35 to 40 Years of Age

PERMANENT JOB

EXCELLENT OPPORTUNITY

Main office Eastern area—Internationally known Construction firm

Experience in design and development of new ideas, processes, as well as practical solution of problems encountered heavy machine manufacture.

P-8817, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

ESTIMATORS

Young engineers capable of mechanical estimating for construction of refineries, steam power and similar industrial projects. Must have some field experience.

Considerable weight given to ambition, intelligence and interest in estimating and cost analysis.

BECHTEL CORPORATION

220 Bush Street

San Francisco, California

WANTED—An experienced CONSTRUCTION SUPERINTENDENT

Large well established Chicago building contractor desires services of general supt. Age preferably 35-45.

Must be cost conscious, able to sit in on pricing. Building projects located in Chicago and Midwest.

Excellent salary and bonus. Replies confidential.

P-8582, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

TEACHING POSITIONS

IN ISRAEL

The Israel Institute of Technology, Haifa, Israel, proposes to appoint 1 professor of civil engineering with special qualifications in structural engineering; 1 professor of hydraulic engineering; 1 associate professor, senior lecturer & 4 instructors in hydraulic and/or sanitary engineering.

Applicants should have first-rate professional and academic qualifications, be willing to integrate themselves into the life of the country and, in due course, to teach in Hebrew.

Applications with full details should be sent, for transmission to Haifa, to:

THE AMERICAN TECHNION SOCIETY
1000 Fifth Avenue, New York 28, N. Y.

EXPERIENCED CHIEF ESTIMATOR:

Must have ability and be capable of directing Estimating Department of a Building Contractors organization in the Southwest.

P-8737, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

Auction Advertising page 107, Equipment Wanted, page 108 & 109

Establishing a new HIGH in rebuilt machinery . . .

Our 3 decades of diversified experience in rebuilding heavy construction equipment, quarry equipment and trucks, can be of invaluable help to you in rebuilding your equipment.

L. B. Smith's proved ability to do the job right . . . the way you want it done . . . can provide important savings in time and money.

If you are undecided what to do about a piece of used equipment, pay us a visit . . . see what we are doing for other customers . . . and to our own equipment. We cordially invite you.

L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 2 NO. 4

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Gardner-Denver 365 cu. ft. diesel.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2540 Cedarapids 4A primary unit, diesel power.
2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
10x7 Allis Chalmers lake type jaw crusher. Rebuilt.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
60" dia. x 14' long Traylor revolving screen. Rebuilt.
15 cu. yd. Cedarapids sand drag. New.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.
24" Dia. x 30" face magnetic pulley.

TRUCKS—TRAILERS

1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77, 1½-yd. diesel.
Lorain 75B, 1¼-yd. diesel.
Lorain 57, 1¼ yd. diesel, rebuilt.
Lorain L-50-I, 1-yd. diesel.
Lorain 40 truck crane on Mack 3-axle truck.
Link Belt LS85 diesel combination. Rebuilt.
Unit 514, ½-yd. gasoline crawler shovel, rebuilt.
Lorain 30A, ½-yd. gas combination.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.
Lorain 77 crane boom, 45'.

BACKHOE BUCKETS & ATTACHMENTS

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching machine 18" to 24" cutting width, 7' depth.

PUMPS

New Layne Bowler tyre 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

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Caterpillar D-13000, rebuilt.
Murphy ME-6, rebuilt.
Caterpillar D8800.

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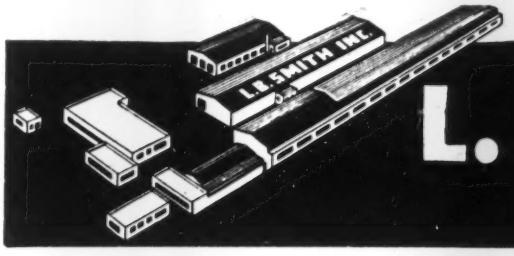

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UNIT CAPACITIES—10 TO 2475 KVA
A.C.—50 AND 60 CYCLES
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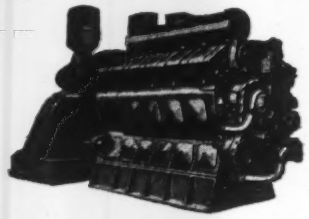

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KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
1980	Nordberg	TS-217	2800	225	320	Enterprise	DSG-6	560	450
1136	Fairbanks Morse	38D	1660	720	300	General Motors	8-268A	450	1200
1100	General Motors	16-278A	1600	720	200	General Motors	8-268A	350	900
750	General Motors	12-567	1080	720	150	Worthington	CC-4	225	450
500	Baldwin	VO-8	750	514	150	Ingersoll-Rand	8-4	225	600
500	General Motors	8-278A	750	720	150	Buckeye	80	240	600
500	General Motors	8-567	720	720	100	Worthington	BB-5	150	600
480	Worthington	DD-8	700	360	100	General Motors	3-268A	150	1200
400	Ingersoll-Rand	8-8	600	720	60	General Motors	6-71	90	1200
350	Baldwin	VO-6	510	450	30	Internat'l Harvester	UD-14	45	1200

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25 ton GE Diesel-Elec. Loco. new 1950.
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1½ to 10 Ton — 18" to 56" Track Gauge
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3—Manitowoc 3000B Cranes with 2 yd shovelfronts, 2 new and 1 in good condition

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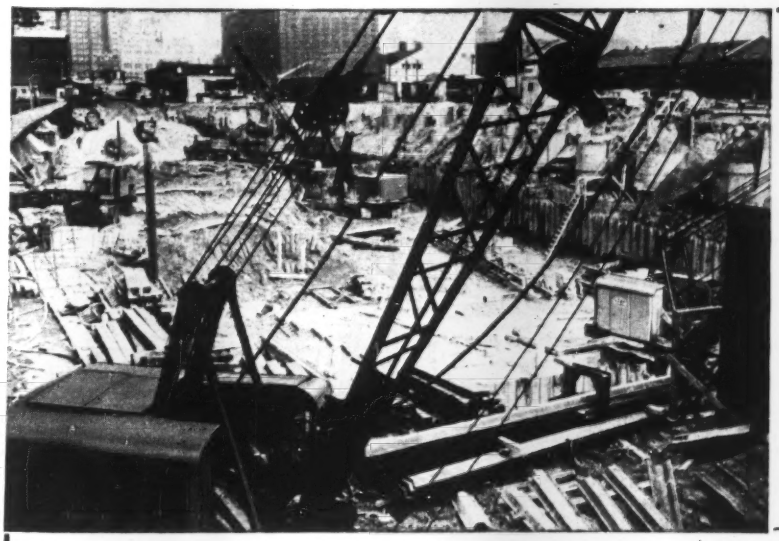

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Lake States Engineering Corp., Chicago, rented two Lorain Diesel Crawler Cranes (models 78 and 80) of 1½ and 1¾ yard capacities for pile driving work at the site of the proposed new 40-story Prudential Building on North Michigan Avenue, Chicago.

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Portable, 2-Stage

500 cu. ft. Ing. Rand, Mdl. K-500, 100#, Waukesha-Hesselman Diesel, 4 pneu. tires, wt. 10,000#. Special at $8,000.

315 cu. ft. Ing. Rand, powered by Waukesha gas or Wauk.-Hesselman Diesel engine. 210 cu. ft. Chicago Pneumatic, Hercules gas eng., current model.

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125 HP Erie City Economic 100#, Nat'l. Bd., 1250 sq. ft. HS, reflued.

115 HP Marion loco. type, 151#, reflued 1951, beautiful shape, Nat'l. Bd.

32 Hp Frick loco. type, 150#, ASME, steel skids.

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No. 3 Northwest, Ser. 4603, 40' boom, Wisc. gas. eng. Good condition, eng. rebuilt.

¾ yd. P&H Mdl. 255A, gas power, hydraulic controls, 40' boom. Good operating condition.

¾ yd. LS-85 Link Belt, year 1946, Cat. D-4600 Diesel eng., 40' boom, good shape.

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Mdl. 501 Koehring #1071, 60-70-80' boom, 18' jib, Mdl. K Wisc. gas eng. Cap. 40 000# @ 12'. Shpg. wt. 97,200#.

1½ yd. Lorain Mdl. 77 #9163, Cat. D13000 Diesel, 45-85' boom, 20' jib, wt. 80,000#.

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Mead Morrison #A-4015, 15 HP Lincoln 220/3/60, 15,000# @ 45 FPM. Excel. shape and a real buy.

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30 ton Mdl. F OHIO #3266, 50' boom, oil fired, Nat'l. Bd. 200# boiler.
25 ton Industrial Brownhoist Type G#4369, 40-50-60' boom, Nat'l. Bd. Boiler, 150#.

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30 ton Wiley Mdl. F Steel Stiffleg, 60, 80 or 100' boom, rated 30 ton at 38' or 15 ton at 57' with 60' boom.

75 KW AC DIESEL GENERATOR

75 KW Diesel AC Generator, 220/440/60/3, Cat. D-13000 Diesel eng., with all accessories. Generator completely rewound. Bargain.

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#800A Vulcan Extractor, wt. 5400#.
#E4 McKiernan Terry Extractor, wt. 4400#.

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10 ton 3-wheel Hercules Road Roller #1197, Cummins Diesel eng., hydraulic steering.
9 ton Acme Tandem Road Roller, rear wheel steer both power and hand, 6 cyl. Hercules gas eng., only $2,300 in operating condition.
8 ton Tandem Buffalo Springfield Rollers, power steer, sprinklers & scrapers for each roll, 4 cyl. Waukesha gas eng., completely rebuilt.

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Badger Mdl. 203 Ladder Type, 1947 unit, Mpls.-Moline gas eng., with 20' boom and 12' boom. Dig 6'6" with short boom and 9'6" with long boom.

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3—1947 Super C Tournapuls, excellent condition ..... $4,500 ea.
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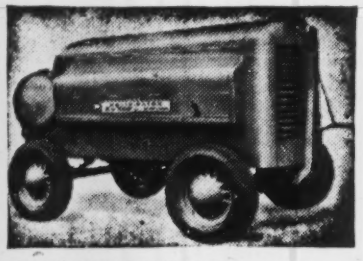

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NOTICE: Inspection can include actual testing of the machines under working conditions. There are large shops at the location of the machinery where purchasers can have any agreed repairs attended to immediately, before delivery.

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MARION shovel, Ward-Leonard electric type 151-M, GE equipment, 23' dipper, 35' boom, 7½ yd. manganese front dipper, oversize electrical equipment, 42" crawler shoes, machine is sectionalized for quick assembly, 1 spare Esco 8½ yd. dipper, S/N 8508, major overhaul in 1953. LOCATION: Crofton, Nebr.

DRAGLINE attachment for the above Marion shovel, 90' boom, 8½ yd. Hendrix drag bucket, LOCATION: Pickstown, South Dakota.

MARION walking dragline model 7200, diesel-electric, Ward-Leonard control, S/N 9072, w/120' boom, 8½ yd. Hendrix drag bucket, drag and hoist power Cleveland diesel engine model GM-8-278A 750 hp. at 720 RPM, driving motor-generator set, all driving motors and generators manufactured by GE Co., new in 1949 and used only two seasons. LOCATION: Crofton, Nebraska.

MARION dragline model 111-M w/Cummins L-6 diesel engine, 90' boom, 5 yd. Hendrix bucket, light plant, S/N 8299, major overhauled in 1953, LOCATION: Crofton, Nebraska.

MARION dragline model 111-M w/GM twin 6-71 diesel engine, electric swing, 70' boom, 5½ yd. Hendrix drag bucket and 90' boom w/4 yd. Hendrix bucket, light plant, S/N 8606, major overhauled in 1952, LOCATION: Pickstown, South Dakota.

SHOVEL attachments for the 2 Marion model 111-M draqs, 3½ yd. dippers w/spare 4¼ yd. Esco dipper. LOCATION: Kansas City, Missouri.

BUCYRUS-ERIE model 54-B combination shovel and dragline, 50' draq boom, Buda diesel engine, light plant, S/N 69835, LOCATION: Crofton, Nebraska.

NORTHWEST model 95 dragline, S/N 13498, w/Murphy diesel and standard 60' boom w/2 - 10' extensions, major overhaul in 1953, LOCATION: Crofton, Nebraska.

BUCYRUS-ERIE model 51-B combination shovel and dragline, 2 yd. S/N 45174, w/Cat D-17000 engine, wide crawlers, 70' boom, light plant, machine rebuilt in March 1953, LOCATION: Wichita, Kansas.

FOUR KOEHRING model 605 combination dragline and clamshell machines, S/N's C-4999, C-5085, C-5195 and C-5273, 50' standard boom w/2 - 10' extensions, Cat D-13000 engine, Kohler light plant, high gantry and long-wide crawlers, LOCATIONS: One at Crofton, Nebraska, two at Wichita, Kansas, and one at Albuquerque, New Mexico.

PULL SHOVEL attachment for Koehring 605 above, 1½ yd. dipper, LOCATION: Wichita, Kansas.

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2 JOHNSON batch plants, C.S., 300 bbl overhead storage, elec. or gas powered, two 1 yd. baichers w/elec. dial scales or beam scales, RR unloading screw and truck hopper, each w/400 bbl. silo, LOCATION: Topeka, Kansas.

2 JAEGER Model H concrete finishing machines, 20 to 25', LOCATION: Topeka, Kansas.

2 MULTIFOOTE pavers, Model 34-E dual drum w/GM 6071 diesel engines, aux. water tank, 3" pump, used less than 400 hours, S/N's 46-D-512 and 46-D-515, LOCATION: Topeka, Kansas.

2 KOEHRING pavers, model 34-E dual drum, diesel power, S/N's 19926 and 17553, LOCATION: Topeka, Kansas.

25 INTERNATIONAL KBS-7 BATCH TRUCKS w/Daybrook double batch bodies, 5 yd. capacity w/7" heavy duty hoists, 2 speed axles, 900x20 tires, LOCATION: Wichita, Kansas.

Heavy Hauling Trucks & Scrapers

15 EUCLID BOTTOM DUMPS, Model FDT, 15 yd. capacity, GM 200 hp diesel, Fuller transmissions drivers cabs and trailer sideboards, S/N's 4688, 4690, 4691, 4778, 4779, 5004, 5005, 5006, 5029, 5030, 5048, 5114, 5148, 5149, 5150, 5151, 6777 and 6779, LOCATION: Wichita, Kansas.

11 MACK REAR DUMP TRUCKS, Model LRSW, Buda 350 hp diesel, 32 ton capacity, sideboards, 1400x24 fronts, 1600x24 rear duals, currently installing new Cummins diesel 300 hp engines, LOCATION: Crofton, Nebraska.

LeTOURNEAU TOURNAPULL Super C w/LP scraper, Cummins 150 hp engine, 12 yd. cap., LOCATION: Topeka, Kansas.

11 CATERPILLAR DW-20's, 1951 models, power steering, 3 yd. top extensions, S/N's 11C6, 11C3, 11C8, 11C7, 11C11, 21C21, 21C22, 21C23, 21C25, 21C26 and 21C27, LOCATIONS: 7 at Wichita, Kansas, 2 at Crofton, Nebraska, 2 at Albuquerque, New Mexico.

5 EUCLID Model 8TDT-14SH motor scrapers, year 1951, Cummins diesel, power steering, Fuller transmissions, 3 yd. extensions, S/N's 12220, 12221, 12222, 12223 and 12224, LOCATION: Crofton, Nebraska.

LeTOURNEAU Model G Scraper, 6 yd., S/N S6134, LOCATION: Albuquerque, New Mexico.

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SIX CATERPILLAR D-8 tractors, S/N's 2U 6196, 2U 6892, 2U 7283, 2U 10366, 2U 10395 and 2U 10396, w/Cat 8A dozers and Cat No. 25 DDPCU's, pan guards, lower roller guards and lights, LOCATIONS: One at Pickstown, South Dakota, three at Ft. Pierre, South Dakota, and two at Crofton, Nebraska.

CATERPILLAR No. 12 motor grader, S/N 8T3745, front 900x24, 10 ply tires and rear 1300x24, 8 ply tires, lights, LOCATION: Crofton, Nebraska.

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GARDNER-DENVER Model WBK500 compressor w/Cat D-13000 engine, mounted 4 tires, S/N 110396, LOCATION: Topeka, Kansas.

CHICAGO-PNEUMATIC Model PO-8 compressor w/Cat D13000 engine, mounted on 4 tires, S/N 42909, LOCATION: Wichita, Kansas.

CONWAY No. 75 mucker w/75 hp 220/440 volt motor, 8½' boom, ⅝ yd. bucket, LOCATION: Pickstown, South Dakota.

McKEEMAN TERRY No. 7 steam pile w/leads, S/N 8317, LOCATION: Pickstown, South Dakota.

15 GARDNER-DENVER Model CF 99 drifters, LOCATION: Kansas City, Missouri.

MASSCO Model 38 bit grinder, Continental power, S/N 554, LOCATION: Pickstown, South Dakota.

2 INGERSOLL-RAND type FS blowers, GE motors, 100 hp., 2400 volt, 3 phase, 60 cycle, single stage 7500 CF mat 2 lbs, LOCATION: Kansas City, Missouri.

2 SPERRY Gyroscope search lights, 60", portable, Model 1941A, LOCATION: Pierre, South Dakota.

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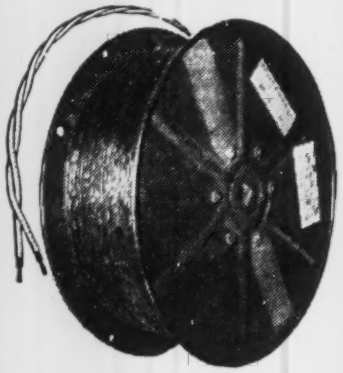

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OFFICIAL PROPOSALS
(Continued from page 97)

Bids: August 31, 1953

PAVING REPAIRS NEWARK AIRPORT CONTRACT O&M-200

THE PORT OF NEW YORK AUTHORITY

Sealed proposals for making paving repairs at Newark Airport, Newark, N. J., will be received at the office of the Department of Purchase & Administrative Services of The Port of New York Authority, Room 900, 111 8th Ave., New York 11, until 11:00 A.M. (E.D.S.T.) on Monday, August 31, 1953, at which time and place said proposals will be publicly opened and read.

Contract documents may be seen at the office of the Department of Purchase & Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt in duplicate will be issued. The duplicate copy of the receipt is then to be delivered to the Department of Purchase & Administrative Services, and you will be furnished with the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within thirty days.
THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman

Bids: September 1, 1953

New York International Airport Alterations to Buildings No. 110, 124 & 125

THE PORT OF NEW YORK AUTHORITY
CONTRACT NYA-300.003

Sealed proposals for alterations to Buildings No. 110, 124 & 125 at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Tuesday, September 1, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon deposit of $25.00 per set. The deposit shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than forty days after the opening of proposals. The deposit will be forfeited if the documents are not returned within the forty days.
THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, August 13, 1953.

Bids: September 3, 1953

George Washington Bridge West 179th Street Tunnel Permanent Street Restoration

THE PORT OF NEW YORK AUTHORITY
CONTRACT GWB-120.022

Sealed proposals for the repaving of West 179th Street in the Borough of Manhattan will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. Thursday, September 3, 1953, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Engineer of Materials of the Authority, Room 1110, and copies will be furnished upon deposit of $25.00 per set. The deposit shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to the Engineer of Materials who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than forty days after the opening of proposals. The deposit will be forfeited if the documents are not so returned within the forty days.
THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
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We have Nation-wide reputation for effecting QUICKEST SHIPMENTS
All sizes Vulcan & McKiernan Pile Hammers & Extractors for rent—Shop Rebuilt
Regardless of location of job, Wire, Write, or Phone

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RENT STEEL SHEET PILING

"Faster From Foster"—the exact lengths and sections — all standard makes—of Rental Piling to meet your job needs. Also Rent: Pile Hammers and Pile Extractors.

RAILS • TRACK ACCESSORIES • PIPE • WIRE ROPE
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STEEL SHEET PILING
(NO CMP ALLOTMENT NEEDED)
AT CHIEF JOSEPH, WASHINGTON
Shipped New—Used Only One Job

CARNEGIE Length	MP-101 Pcs.	MP-102 Pcs.	TEES Pcs.
72-68 ft.	65	81	0
65-60 ft.	800	58	1
55-50 ft.	65	3	7
45-40 ft.	645	0	6

Also quantity 35 Ft. and shorter—Quick Shipment. Regardless of job, location. Write, Wire or Phone

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479 PCS. Z-27 LB.—40 FT., EAST COAST.
900 TONS ALGOMA B6—30 FT. CANADA.
300 PCS. AP3—20 FT. N. Y.
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STEEL SHEET PILING

210 Pcs 40-60 ft M-112 So. Dakota
600 Pcs 35-40 ft M-112 Kansas City
66 Pcs 27-29 ft M-116 Kansas City
295 Pcs 17-19 ft M-112 Kansas City
86 Pcs 15-16 ft I-23 Kansas
117 Pcs 14-16 ft I-23 Missouri
70 Pcs 11-19 ft M-116 Oklahoma

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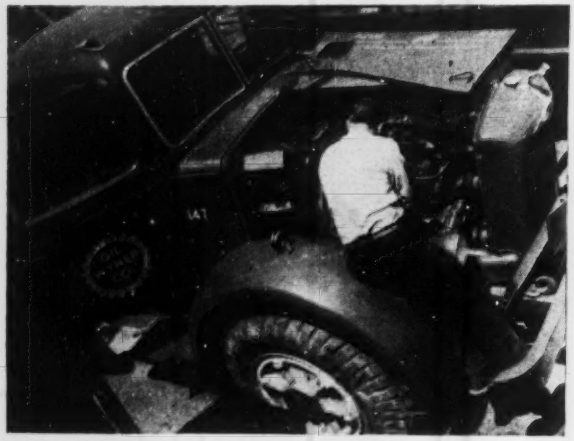
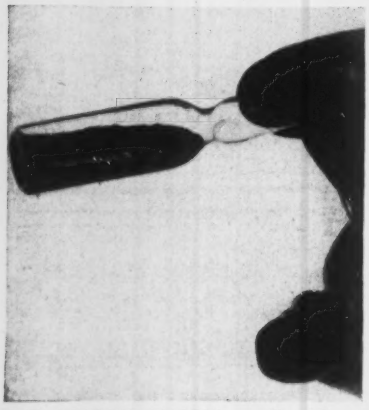
Watch—
the *Searchlight Section*
for
Equipment Opportunities

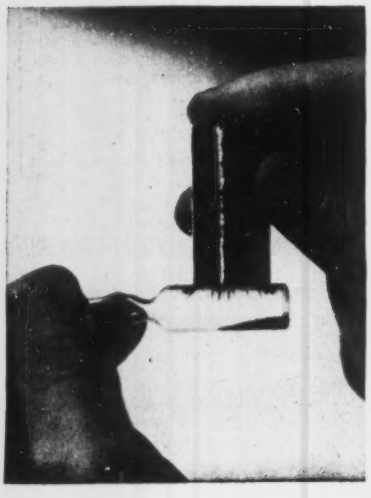


LUBE OIL SAMPLE is extracted with PMS supplied suction guns and emptied into individual sample bottles to be sent to the New York lab.

TESTING OF THE OIL SAMPLE reveals facts on engine performance. PMS' engineers analyze the results and prescribe necessary treatment.



FOR SHOCK VALUE small vials of harmful residues found in oil samples are sometimes sent to subscribers. Gum and iron filings are shown.



Stool pigeon— new role for lube oil

If you are an average equipment owner there is something you should know and correct in a hurry. Out of every ten engines you have working for you, four are running under improper conditions. But there's a way of telling whether your equipment is turning sour and, better yet, a way to correct the improper running conditions—without guesswork.

• **Here's how**—By analyzing oil samples taken from engine crankcases, chemists and chemical engineers of Preventive Maintenance Service, Inc. can determine exactly what is wrong with a particular engine and prescribe appropriate treatment, should it be required. If the equipment is operating satisfactorily, PMS keeps a running check on it to maintain peak performance and catch minor malfunctionings before they turn into disasters.

• The actual sequence of events goes something like this:

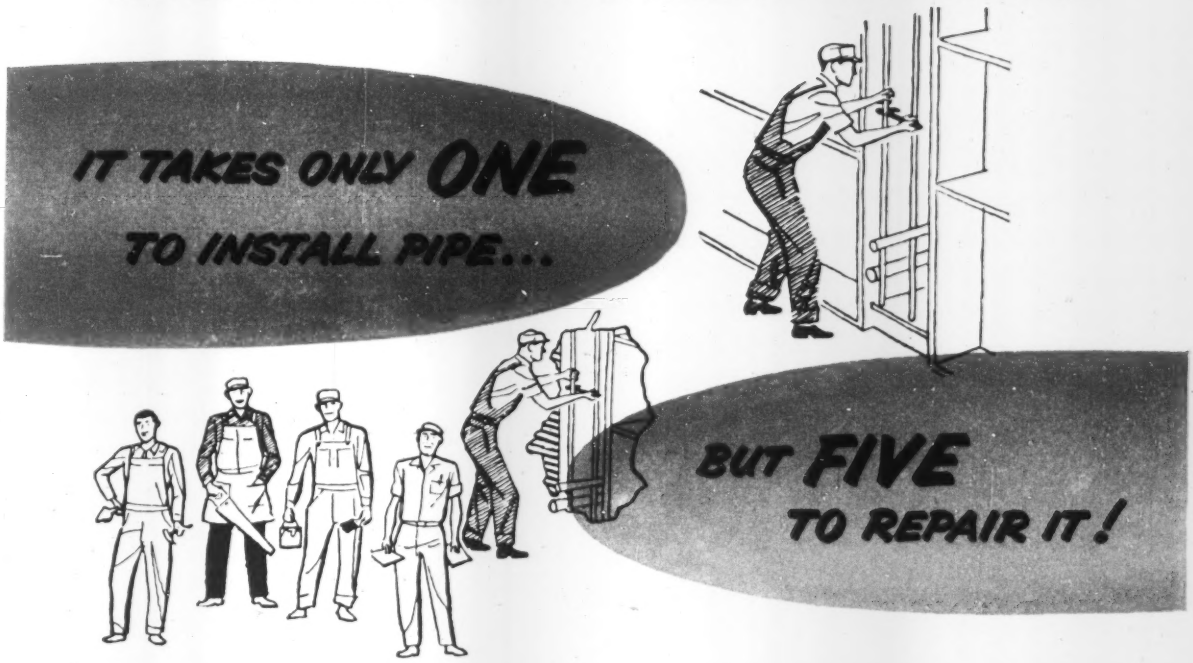
As soon as you contract for the service, PMS supplies you with suction guns, sample bottles, identification tags, self-addressed gummed labels and pre-posted shipping boxes. At an established schedule, agitated oil is withdrawn from the engine—this is done by inserting the tube of the suction gun through the dip stick hole to the bottom of the crankcase. The oil is emptied into a tagged 2½-oz. sample bottle and sent to the New York lab for analysis. The bottle tag carries basic information such as the type of engine, number of cylinders, engine number and mileage.

At the New York labs PMS' analysts run tests on the oil to determine, among other things, the operating viscosity, amount of fuel dilution and whether there is any soot, metal, gums, abrasives, lead salts, water or any other foreign substance present in the oil. The results of the tests are recorded on master cards bearing the basic data from the bottle tag. From the completed master card, the overall picture is drawn by PMS' chemical engineering division—a group of engine experts who synthesize the test results, prescribe treatment and keep a running tabulation on the performance of the engine. If a serious malfunctioning is observed, the contractor is informed by phone and confirming telegram, otherwise a written report is mailed.

One of the outfits currently using PMS is the Gil Wyner Co., a Boston contractor. Mel Wyner, maintenance superintendent for the company, had this to say about it:

A blood specialist can analyze a sample of blood, diagnose any weaknesses and prescribe treatment. Naturally, he can't recommend a general purpose cure-all for all individuals but must have a specific sample from each person on which to base his diagnosis. Well, the blood of engines is the lube

Here's why CORROSION COSTS YOU MORE than WROUGHT IRON



One of the most convincing demonstrations of the economy of using *durable* material is a pipe repair job where low-first-cost material has failed—and is being replaced.

The original installation had been quickly made by plumbers. But the replacement calls for hours of work by as many as five crafts: plumber, mason, plasterer, carpenter, painter. Often, maintenance is billed at overtime rates. And this is only part of the cost story. Production slow-down, disrupted routine may amount to far more than the maintenance charges.

Fortunately there's an answer to pipe durability in corrosive services—Byers Wrought Iron pipe. In literally thousands of applications where corrosion is a threat, the use of this material has proved the soundest kind of economy move.

The next time you specify or approve pipe, you'll find it profitable to investigate the durability records of wrought iron.

Our bulletin, "The ABC's of Wrought Iron," gives the what, why and where of this material. Write for a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, New York.

Remember—
the pipe that lasts
the longest
costs the least!

FOR PRODUCTION CONTINUITY
LOWER MAINTENANCE—
Insist on Byers
WROUGHT IRON PIPE

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

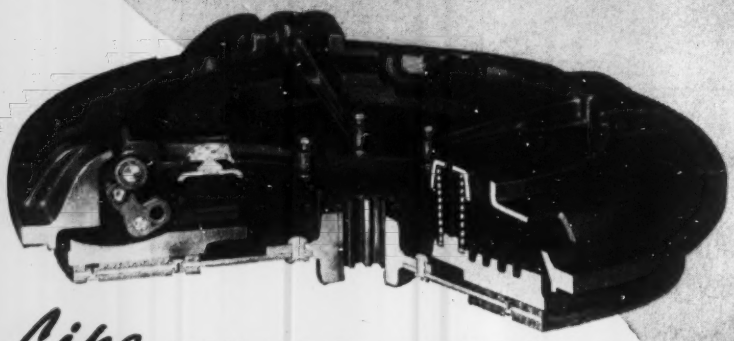
WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

Constant Torque Capacity

for entire life of friction material



Lipe CONSTANT-CAPACITY CLUTCH
OF THE NON-ADJUSTABLE TYPE

The Lipe Constant-Capacity Clutch uses a unique application of the toggle-lever principle: Compensates for fading pressure of expanding springs . . . maintains maximum torque capacity throughout life of frictional material.

The constantly increasing ratio of the toggle levers — which never go over center — compensate for the loss of pressure due to spring expansion. So long as there is enough frictional material to hold, the Lipe Constant-Capacity Clutch of the non-adjustable type does not lose torque capacity.

Every Feature of This Clutch Gives You Extra Service

Engages gently because the toggles absorb the initial energy of the springs . . . and because the speed of the toggle action fades as the pressure plate approaches the friction element. It has a high thermal efficiency because the massive plate, ribbed for rapid radiation, is cooled by positively generated air currents.

The pressure plate and friction element are always parallel. Non-adjustable, serviced without special tools.

Write for detailed specifications and performance data.

LIPE ROLLWAY

Lipe-ROLLWAY CORPORATION

Manufacturers of Automotive Clutches and Machine Tools

Syracuse 1, N. Y.

oil reaching every moving part through engine arteries. A PMS analyst considers one engine sample at a time and separate samples are needed for each piece of equipment. Then, depending on his diagnosis and my treatment, we can check the improvement in performance. During this time, naturally, samples are requested and analyzed more frequently."

These special samples that Gil Wyner mentioned are mailed out in single-bottle mailing tubes with the self-addressed sticker and postage, as usual, provided by PMS. In this way the job man doesn't have to search for stamps or send the specimen back through the office. He just drops it in the nearest mailbox.

During the year and a half that PMS has made its service available to the construction industry, a number of expensive engines have been saved from the scrap heap or at least from major overhaul by recognizing dangerous symptoms before they become apparent to the maintenance crew.

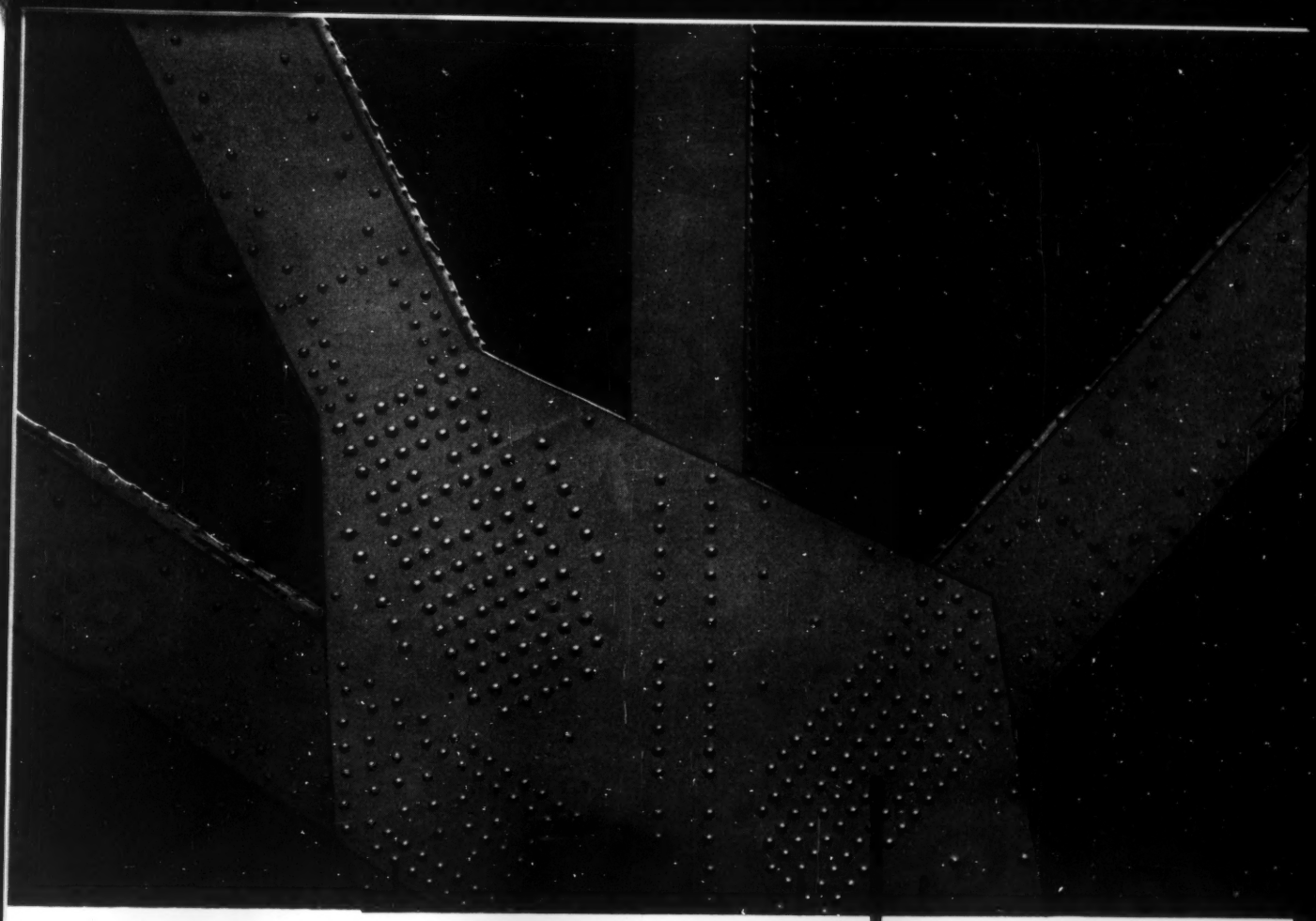
Although the big savings are spectacular, it's the small savings—the extras—that give PMS it's greatest potential.

For example, the scheduling of oil and oil filter changes is normally based on miles or hours of use with a guessed at "finagle factor" thrown in to account for weather and general operating conditions. Many users of PMS discovered that they were making changes too frequently since lab reports showed that the oil was not yet contaminated. Of course there were the opposite cases where contractors were not changing these items often enough and a few, operating under extremely dusty conditions, were required to modify the stock filter systems. In all cases, however, it is important to note that each of the changes recommended were for specific engines to assure efficient operation of all engines not just a few.

Similarly, PMS is able to establish fuel and oil specifications for each engine to assure peak efficiency of operations under varying conditions.

As a final touch, PMS develops a report to management every 30, 60 or 90 days depending on the number of pieces of equipment and the regularity of their use. The report is written in non-technical terms to give general managers the big picture of how their equipment is holding up and includes general suggestions for improving overall fleet performance for each contractor's specific requirements. PREVENTIVE MAINTENANCE SERVICE, 331 FOURTH AVE., NEW YORK, N. Y.

(*New Products continued on p. 115*)



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- A Better Job

Whether you're building a bridge, skyscraper, institution or industrial plant, you can't match the easier handling and faster construction time of Structural Steel.

The unexcelled facilities of Fort Pitt Bridge, combined with 56 years specialized engineering, fabricating and erection experience, are always available to you for any type of steel construction, any time, anywhere.

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The 1953 Construction Costs Yearbook

will be your October 8 issue

Complete and accurate data on cost movements in the construction industry—collected, analyzed, and interpreted by Engineering News-Record's Business News Dept. More complete and more valuable than ever before.

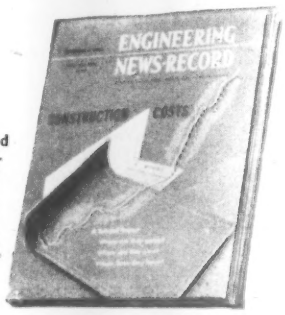
The Annual Costs Yearbook will include:

- Cost Trends and Outlook
- Construction Cost Indexes
- Building Cost Indexes
- Highway Price Indexes
- Dam and Hydro-power Cost Indexes
- Unit Prices
- Building Trades Wage Rates
- Materials Prices
- Financing Costs
- Compensation Insurance Rates
- Equipment Rental Costs
- Depreciation Schedules

and many other important cost features.

The Annual Construction Costs Yearbook, published every year by Engineering News-Record, is the only place all this information is available.

Extra copies can be ordered in advance—($2.00 each).



1952 Construction Costs Yearbook contained 402 pages, crammed with factual information. 1953 Yearbook will be even bigger, even more valuable. Be sure to order your extra copies now.

ENGINEERING NEWS-RECORD

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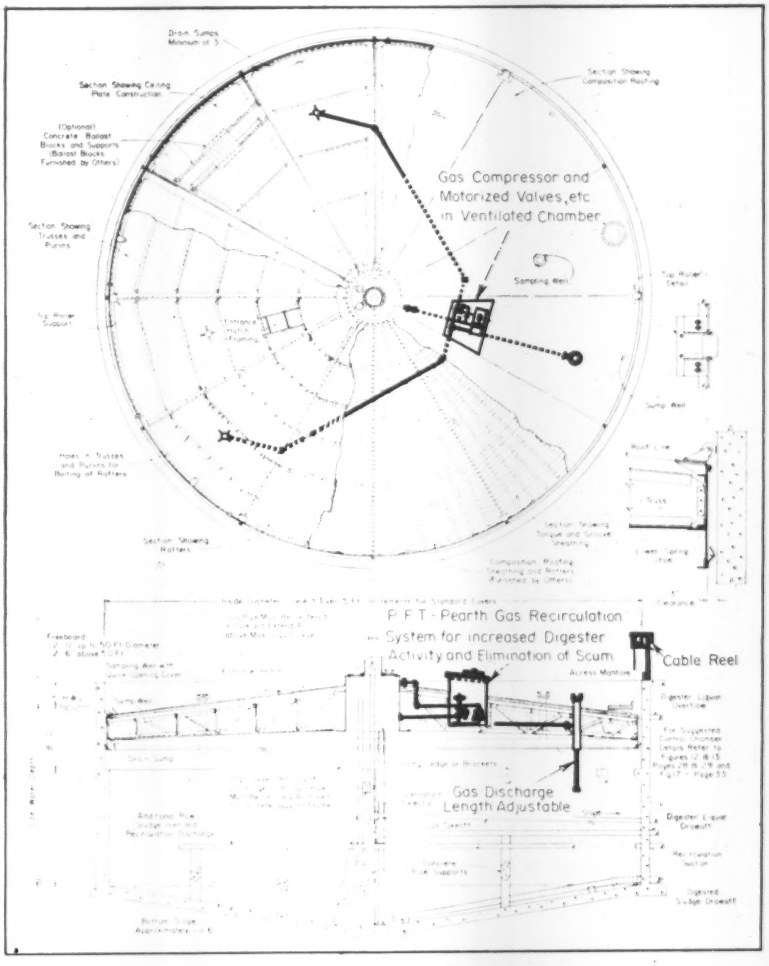

Gas Compressor and Motorized Valves, etc in Ventilated Chamber
P.F.T.-Pearth Gas Recirculation System for increased Digester Activity and Elimination of Scum
Cable Reel
Gas Discharge Length Adjustable

Gas recirculation system for sludge tanks agitates scum with less power

By the simple expedient of compressing gas collected under the dome of the floating cover and discharging it below the scum level of digesting sludge, a new recirculation system is said to increase digestion activity with less power required than in the case of conventional agitating or liquor recirculating systems. In addition, clogging is eliminated since no moving parts are in contact with the digestion tank contents.

Called the P.F.T.-Pearth Gas Recirculation System, this compression, distribution and control arrangement creates a lifting action of the gas and causes "seeding" digester liquor to be displaced into the scum zone, agitates the scum and releases entrained gases, resulting in the dispersion of the scum.

Motorized or manually operated valves in the discharge lines from the gas compressor allow the full capacity of the compressor to be used at a number of points within the tank. In this way the power required for compressing the gas to operating pressure (5 psi) is kept to a minimum. Examples cited by the manufacturer show that a 100-ft dia tank will require 75 cfm and 5 hp and a 50-ft dia tank 30 cfm and 3 hp or less.

The system is available as an integral part or as an attachment to the standard floating cover manufactured by the Pacific Flush Tank Co. and for use with fixed concrete covered tanks. PACIFIC FLUSH TANK CO., 4241 RAVENSWOOD AVE., CHICAGO 13, ILL.

(*New Products continued on p. 116*)

FITTING EVERY WAY

For Further Information on Irving Gratings, Write

IRVING SUBWAY GRATING CO., INC.
ESTABLISHED 1902

OFFICES and PLANTS at
5063 27th St., Long Island City 1, N. Y.
1863 10th St., Oakland 20, California

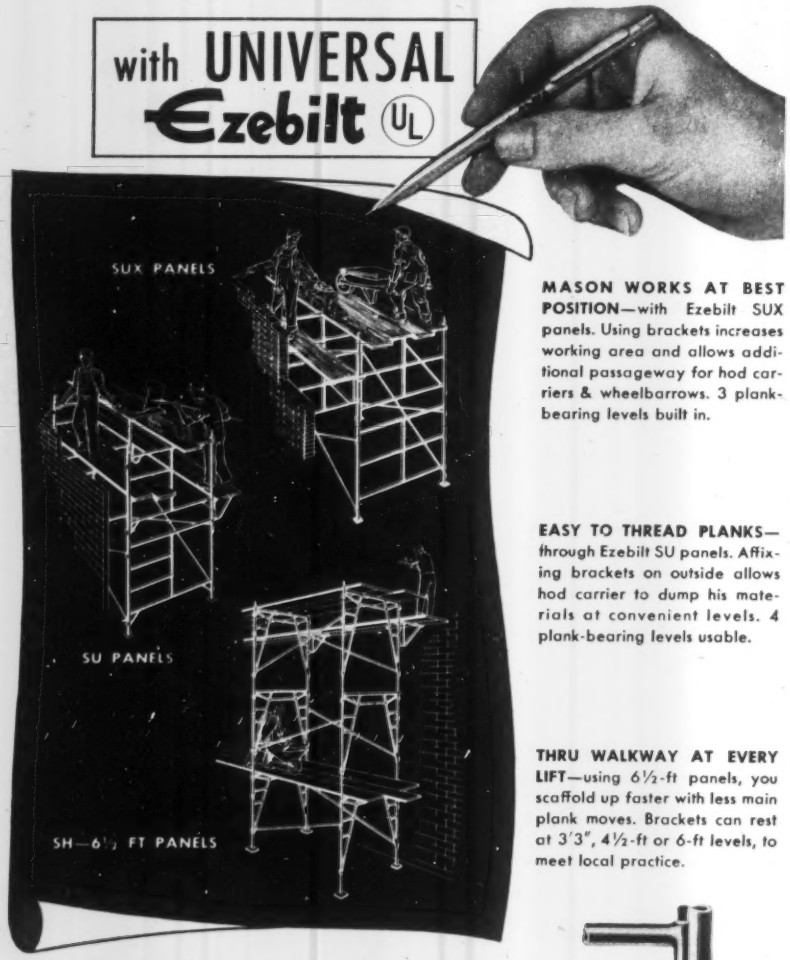
on any mason application

IT'S EASY TO PLAN SCAFFOLDING

SHORT CUTS

for_____LESS WORK
LESS TIME
LESS COST

with UNIVERSAL Ezebilt (UL)



MASON WORKS AT BEST POSITION—with Ezebilt SUX panels. Using brackets increases working area and allows additional passageway for hod carriers & wheelbarrows. 3 plank-bearing levels built in.

EASY TO THREAD PLANKS—through Ezebilt SU panels. Affixing brackets on outside allows hod carrier to dump his materials at convenient levels. 4 plank-bearing levels usable.

THRU WALKWAY AT EVERY LIFT—using 6½-ft panels, you scaffold up faster with less main plank moves. Brackets can rest at 3'3", 4½-ft or 6-ft levels, to meet local practice.

NO LOOSE PARTS WITH GRAVITY LOCK

Because of the hinge feature of its exclusive Gravity-Lock, Ezebilt helps you save time . . . it's a completely-automatic locking mechanism . . . no nuts, no bolts, no loose parts. So versatile . . . it gives you the costs-saving short cuts you need on any scaffold job, large or small—for either inside or outside work.

WRITE FOR COMPLETE DESCRIPTIVE CATALOG E-8

UNIVERSAL MANUFACTURING CORP.
ZELIENOPLE, PA.

World's Largest Producer of Steel Panel Scaffolding

Distributors offer planning help and fast deliveries from sales and rental stocks—See your phone directory

Highway material spreader has one-man operation

The Model J Hi-Way material Spreader has been designed to effect complete coverage of highway surfaces and at the same time halve the labor required by usual methods.

The spreader has been developed particularly to handle pelletized calcium chloride and rock salt but is reported to work equally well with sand and chips for seal coat work and stone up to 1½ in. in size.

The feed roll that distributes the material is driven from the truck drive shaft so that its speed is positively synchronized with the revolutions of the rear truck wheels. Potentially, this synchronization assures a uniform density of spreading pattern regardless of truck speed or direction.

The spreader has an overall width of eight feet and achieves a spread of 7 ft. 6 in. It is designed to mount on any standard dump body without alterations, being interchangeable with the regular tailgate. Highway Equip't Co., 602 D Ave., N.W., Cedar Rapids, Ohio.

New 35-T hydraulic jack handles the heavy weights

Weighing in at only 55 lbs, a new 35-ton hydraulic jack can do the heavy shoving or lifting any place that allows

for clearance of the closed height of the jack—about 9 11/16 in.

According to the manufacturer, the high force to weight and force to size ratios are made possible by a special air vent that eliminates 90 per cent of "air lock" difficulty and permits the use of a smaller reservoir.

The jack is of single pump design with a long stroke to allow the load to be raised the full six inches with fewer strokes. The tool is mounted on a 6 x 8-in. base and has a head diameter of 2⅝ in. DUFF-NORTON MFG. CO., PITTSBURGH 30, PENNA.

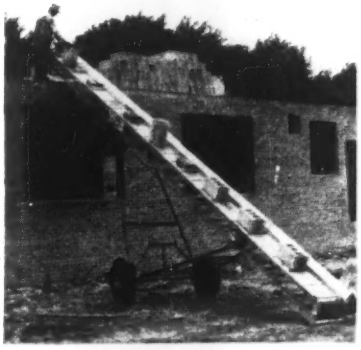
Portable conveyor offers aid to fast construction

The tiring and time wasting task of moving building materials into position once a structure rises over six feet can be eased considerably with the installation of a conveyor system. Several contractors' conveyors are available, but a new one has been entered in the field.

Called the Fairfield Builder, the new conveyor is available in two models; one, a deep-trough type, for all building materials less than 16 in. wide and another for elevating wide insulating board, corrugated roofing or siding.

Rates of carriage for the machines are reported to be 70 bricks, 35 concrete blocks or 35 rolls of roofing from ground to roof in one minute.

By adding eight-foot boom sections, the 24-ft base machine can be converted to a 32- or 40-ft conveyor. It is said that because of the Builder's balanced construction, one man can move it from place to place on the job and it can be towed from job to job by either truck or car. The conveyor is equipped with a ratchet type hand hoist for raising and lowering the boom and has a removable base for either gasoline engine or electric motor. FAIRFIELD ENGINEERING CO., BARNHART ST., MARION, OHIO.



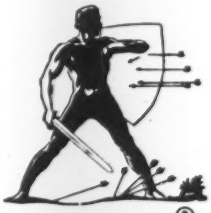
For *Your Family!*

When making your will, the uppermost thought in your mind is to provide for the security of your loved ones.

Consult your attorney and direct him to include in your will a requirement that your executor be BONDED by NATIONAL SURETY CORPORATION. By so doing, you will guarantee the protection of your family to the full extent of your estate.

The cost of the bond is low and the financial responsibility of NATIONAL SURETY CORPORATION together with its long years of experience in the bonding of estates GUARANTEES the faithful performance of the duties of your executor.

Consult the local agent or nearest office of NATIONAL SURETY CORPORATION for applicable rates and other details.



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May 5, 1952

Masonite Corporation
111 West Washington St.
Chicago 2, Illinois

Gentlemen:

We are happy to report another successful application of Masonite Concrete Form Presdwood.

This material was used to form over 90,000 sq. ft. of exposed concrete ceilings of the 208 apartments in the 15-story Glen Oak Towers in Peoria, Illinois.

We have found that through the use of Masonite Concrete Form Presdwood, we are able to reduce time and therefore costs of producing finished concrete ceilings.

Sincerely yours,
E. H. MARHOEFER, JR. CO.
by
E. H. Marhoefer, Jr./gv

CONCRETE EVIDENCE
that
MASONITE CONCRETE FORM PRESDWOOD
cuts costs!

This letter is just one of many that tell how Masonite Concrete Form Presdwood® saves time and money.

No wonder more and more contractors are using this tough, grainless, all-wood hardboard wherever they want smooth-surface concrete. Leaves no wood-grain texture. Concrete is ready for painting without expensive hand-rubbing. Handy 4′ x 8′ or 4′ x 12′ panels are easy to cut for an exact fit...offer a minimum number of joints.

• Can be used again and again.
• Won't split, splinter or crack,
• Can be curved for arches, columns, etc.
• Easily worked with carpentry tools.
• Insures complete, uniform hydration.

MASONITE® CORPORATION

Send for the complete facts about Masonite Concrete Form Presdwood!
Dept. ENR-8-13, Box 777, Chicago 90, Illinois

"Masonite" signifies that Masonite Corporation is the source of the product

Please send me your brochure on Masonite Concrete Form Presdwood.

Name.....
Address.....Zone.....
City.....State.....
County.....

Better Hardboards for Better Concrete

NEW PRODUCTS

Loader attachment for TD-6 has 3000-lb, 7/8-yd capacity

The Drott 6K3 Skid-Shovel is designed and built exclusively for mounting on TD-6 International tractors. The shovel has a capacity of $\frac{7}{8}$ cu yd struck with a 3,000-lb. lift. Digging or breaking-out force is 8,500 lb.

The loader fills out the Drott line of attachments so that there is now a Drott shovel for the TD-6, TD-9, TD-14A and TD-18A. DROTT MANUFACTURING CORP., 3841 W. WISCONSIN AVE., MILWAUKEE 8, WIS.

New Products briefs . . .

• **Rust protection**—Formula No. 50, a new method of surface protection of iron and steel has been developed by the Constad Laboratories, 120 West 28th Street, New York 1, N. Y. The product is said to differ from other types of metallic paints in that it can be used over rusted surfaces (loose scale removed) and that a galvanic action takes place through the rust. Applied with a paint brush or spray gun (60-90 psi with a No. 4 nozzle) Constad's Formula No. 50 takes one hour to dry. At brushing consistency it leaves a deposit of .25 oz per sq ft; of a thickness of .005 to .007 in. One gallon is said to cover 500 sq ft.

• **Waterproofing paint**—A new oil base paint for waterproofing masonry surfaces is announced by the Monroe Co., Inc., 10703 Quebec Ave., Cleveland 6, Ohio. Known as Damp Seal, the paint is available in seven colors and is reported to resist moisture on interior and exterior masonry surfaces for years with one application. The paint also can be used as a filler or sealer for high gloss enamels it is said.

PUBLICATIONS

Prestressing cable—"Strand and Fittings for Prestressed Concrete" is the title of a catalog containing specifications and descriptions of Roebling's prestressed concrete strands and anchor fittings. The 14-pager also includes information on post-tensioned designs and applications. JOHN A. ROEBLING'S SONS CORPORATION, SUBSIDIARY OF THE COLORADO FUEL AND IRON CORPORATION, TRENTON 2, N. J.

Gates and valves—Bulletin 1252 describes the line of gates and valves manufactured by Stephens-Adamson Mfg. Co. The 20-page booklet contains details and dimensions for slide gates, quadrant gates and other conventional units. STEPHENS-ADAMSON MFG. CO., AURORA, ILL.

Concrete panel forms—An entirely new illustrated 32-page catalog—of interest to the concrete construction industry—describes the various applications of a complete line of steel-framed, plywood panel forms for most types of concrete forming: straight, curved or battered walls; slabs; beams; columns; piers and foundations. UNIVERSAL FORM CLAMP CO., 1238 NORTH KOSTNER AVENUE, CHICAGO 51, ILL.

Flexible metal hose—Titeflex helically-wound flexible metal hose and Uniflex helically-corrugated flexible metal hose are illustrated and described in a new 48-page catalog. Featured in the Engineering Data Section are charts showing frictional losses versus flow rates for various sizes of metal hose and conduit. Also included is information on installation and maintenance of metal hose. Catalog No. 200, TITEFLEX INC., 500 FRELINGHUYSEN AVENUE, NEWARK 5, N. J.

Diesel engine—A booklet entitled "Cummins Powered Euclid Equipment" describes five Cummins diesels and 16 standard models of Euclid equipment they power. EUCLID ROAD MACHINERY COMPANY, CLEVELAND, OHIO.

Steel wire creep—The second quarter issue of "Testing Topics" includes an article covering the development of an instrument to test the creep characteristics of steel wire under tension, as in prestressed concrete construction where the measure of strength is the amount of steel tension that is effective in the concrete at any time. BALDWIN-LIMA-HAMILTON CORPORATION, PASCHALL STA. P. O., PHILADELPHIA 42, PA.

ADVERTISERS IN THIS ISSUE

Alemite Div., Stewart-Warner Corp. ... 87
American Lumber & Treating Co. ... 53
Armco Drainage & Metal Products Inc. ... 2nd Cover
Austin-Western Co. ... 16

Baldwin-Lima-Hamilton Corp. ... 68
Barber-Greene Co. ... 59
Barco Mfg. Co. ... 44
Bay City Shovels, Inc. ... 38
Belmont Iron Works ... 85
Bethlehem Steel Co. ... 88
Byers Co., A. M. ... 111

Cement Gun Co. ... 66
Century Geophysical Corp. ... 61
Concrete Reinforcing Steel Institute ... 93

Dicalite Div., Gt. Lakes Carbon Corp. ... 64
Dodge Corp., F. W. ... 80
Dodge Div., Chrysler Corp. ... 9
Dow Chemical Co. ... 35
Dravo Corp. ... 70
Dudgeon, Inc., Richard ... 85
Du Pont de Nemours & Co., Inc. Finishes Div. ... 65

Economy Forms ... 78
Eimco Corp., The ... 41
Erie Steel Construction Co. ... 6, 69

Fennel Instrument Corp. of Amer. ... 83
Fidelity & Casualty Co. of N. Y. ... 60
Fleixble Road Joint Machine Co. ... 52
Flintkote Co., The ... 42
Fort Pitt Bridge Works ... 113
Foundation Equip. Corp. ... 69

General Electric Co., Const. Materials Div. ... 56, 57
Getman Bros. ... 78
Gilson Screen Co. ... 63
Griffin Wellpoint Corp. ... 76
Gunite Concrete & Const. Co. ... 81
Gunite Construction Co. ... 77

Harnischfeger Corp. ... 1
Hayward Co. ... 77
Heltzel Steel Form & Iron Co. ... 71
Hendrix Mfg. Co. ... 55
Homelite Corp. ... 28
Hose-McCann Telephone Co. ... 59
Hunt, Machine Co., Rodney ... 36

Insurance Co. of North America ... 72
International Steel Co. ... 67
Irving Subway Grating Co. ... 115

Kinnear Mfg. Co. ... 84

LeRoi Co. ... 50
Lewis & McDowall Co., Inc. ... 64
Lipe-Rollway Corp. ... 112
Littleford Bros., Inc. ... 66
Lone Star Cement Corp. ... 18

M & H Valve & Fitting Co. ... 82
Macomber, Inc. ... 12
Madsen Iron Works, Inc. ... 64
Mahon Co., R. C. ... 7
Marlow Pumps ... 74, 75
Masonite Corp. ... 118
McDonough Steel Co. ... 58
McGraw-Hill Book Co. ... 86
McKiernan-Terry Corp. ... 80
Michigan Power Shovel Co. ... 3rd Cover
Mississippi Glass Co. ... 77
Moretrench Corp. ... 84

Nat'l Surety Corp. ... 117
Northwest Engineering Co. ... 3

Pennsylvania Drilling Co. ... 82
Pittsburgh Plate Glass Co. ... 8
Plasteel Products Co. ... 51
Portland Cement Assn. ... 48

Republic Steel Corp. ... 11
Russell, Burdsall & Ward Bolt & Nut Co. ... 14
Ryerson & Sons, Inc., Jos. T. ... 20

Sauerman Bros., Inc. ... 70
Servicised Products Co. ... 69
Smith, Gordon & Co., Inc., S. ... 80
Southern Piling Co. ... 90
Spencer, White & Prentis, Inc. ... 84
Sprague & Henwood, Inc. ... 81
Standard Dry Wall Products ... 79
Stoody Co. ... 13
Sturtevant Co., P. A. ... 90

Tapecoat Co. ... 49
Texas Co. ... 4, 5
Thompson Pipe & Steel Co. ... 89
Thurman Machine Co. ... 79
Timken Roller Bearing Co. ... 4th Cover
Tinney Drilling Co. ... 85
Trailer Village, Inc. ... 82
Trans-Global Co. ... 2
Tri-Lok Co. ... 70
Tulsa Winch Mfg. Co. ... 83

Unit Crane & Shovel Corp. ... 10
U. S. Gypsum Co. ... 47
Universal Mfg. Co. ... 116
Universal Sewer Pipe Corp. ... 31

Vibroflotation Foundation Co. ... 70
Victaulic Co. of America ... 15
Vulcan Iron Works ... 76

Walker Process Equip. Co. ... 81
Walton Plywood Co., Inc. ... 76
Waukesha Motor Co. ... 54
Weil Pump Co. ... 78
Western Foundation Corp. ... 59
Williams Co., J. H. ... 90
Wood Mfg. Co. ... 85

Professional Services ... 109

SEARCHLIGHT SECTION

(Classified Advertising)

H. E. Hilty, Mgr.

Employment ... 98, 99
Educational ... 99
Business Opportunities ... 99
Notices ... 95, 96, 97, 107
Equipment (For Rent, Sale, Wanted) ... 100-109

EDITORIALS

Long-range highway planning

SETTING UP the federal-aid highway program on a 10-year basis instead of the usual two or three years, as recommended to Congress by James Cope of the Automobile Manufacturers Assn. (ENR July 9, p. 22), has much to commend it. The same can be said of Mr. Cope's proposal that federal aid should be concentrated on the basic interstate system.

Ten years may be too long a period to be covered by federal-aid legislation. But if a 10-year program could be set up initially, and then be reviewed and extended by Congress at the end of five years, the states could do much better advance planning than is possible today. Under the present system, state highway departments come to the end of the period covered by each federal-aid highway act with no knowledge of how much aid they may expect under the next bill. For example, the departments have no knowledge now of how much federal aid they will get after June 30, 1955, and they may not know until some time in 1954. No sound advance planning can be done on that basis.

Concentrating all or most of the federal aid on the nation's basic highway network until it has been made much more adequate than it is today is a sound proposal. Most of the bottlenecks that are causing costly delays to large volumes of traffic are on that network, especially in and around cities. Getting rid of them should take precedence over all other highway work for a few years at least.

In fact, the need is so urgent that Congress might well give consideration to modifying the formula by which federal aid has been allocated to the states for many years. That formula penalizes the thickly populated states and favors the states with wide-open spaces. Doubtless that was desirable in the early days of highway building, but there is much less if any justification for it now.

Giving the populous states federal aid on a basis more nearly matching their need, and authorizing such grants on a long-range basis, should contribute very materially to a solution of today's highway problem.

Certified sanitary engineeers

IT IS GOOD NEWS that representatives of the existing technical societies and proponents of a plan to set up a new society known as the American Institute of Sanitary Engineers (ENR Aug. 6, p. 25) have agreed on an alternate solution of the problem of sanitary engineer recognition. Yet the plan proposed is not going to be simple to carry out.

The proposal made by representatives of five existing societies embracing sanitary engineers, sitting as the Joint Committee for the Advancement of Sanitary Engineering, is that the American Society of Civil Engineers (and perhaps later Engineers Joint Council) supervise a system for issuing certificates to men having certain specified qualifications as sanitary engineers to indicate they have been designated as members of the American Academy of Sanitary Engineers. This academy, unlike the institute proposed originally (ENR Feb. 12, p. 28), would have no reality. It would be simply a roster.

Proponents of the institute originally held that a certificate of membership in an organization with a name including the words "sanitary engineering" would enhance the professional standing of sanitary engineers, especially those employed by such agencies as the U.S. Public Health Service where members of the medical profession are said to be accorded a professional stature not granted to sanitary engineers. It is now agreed that holding a certificate of membership in the proposed academy would serve the same purpose.

The first question that the certification proposal raises would be one of administration. The ASCE now has an elaborate system for checking the record of applications for membership, which requires considerable voluntary time on the part of two national committees and a multitude of local qualification committees. At best, the findings of those committees simply determine that a man's record meets the minimum requirements for a certain grade of membership. This is quite a different thing from certifying that a man has certain qualifications as a sanitary engineer. Hence it would seem that the proposed five-man qualifying committee, before its members would put their name on such a certificate, would require a searching inquiry into the degree of responsibility of the applicant in each major assignment given in his professional record. That would be costly and time-consuming.

Another question relates to the level at which qualification for a certificate is to be set. If the level is so high as to give real significance to listing as a member of the proposed academy, then the number who could qualify would be small, and in all probability would not include all the men who seek the prestige of some such certification.

On the other hand, if the requirement for a certificate issued by ASCE is set at or near the level of the model registration law, the certificate would have so little significance that few would go through the trouble and expense of applying for it. Even using the eight years of practical experience in sanitary engineering proposed by sponsors of the new society would seem to raise question as to the distinction that such a certificate would confer.

These are questions that will have to be weighed by the Board of Direction of ASCE. If that board finds none of them insurmountable, the need for a new society may have been eliminated.

NAVAL YARD SEWAGE PROJECT . . .

Michigan Model C-16, ½ yd. clamshell, equipped with 30-inch crawler pads.

Construction of 4,500 feet of sewage lines to connect the Norfolk Naval Yard system with that of Portsmouth, Virginia, is being handled by A. G. Pinkston Company, Portsmouth. Trenches are 6 feet wide, 6 feet to 16 feet deep and carry 4-inch to 30-inch main and lateral pipe.

Three MICHIGAN Crawler Excavators and a MICHIGAN Truck Crane are working on the job. Their speed and handling ease are major factors in keeping the job moving on schedule. "With the MICHIGAN air controlled clutches we gain one to two bucket loads over every ten handled by other shovels. This adds 10%-15% to our daily production," states A. G. Pinkston, Jr.

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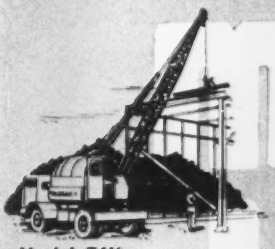

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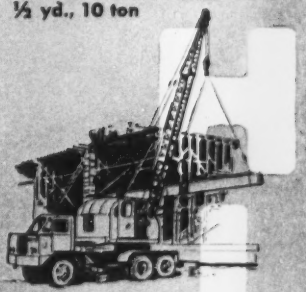
Model TMDT-16
½ yd., 10 ton



Model TLDT-20
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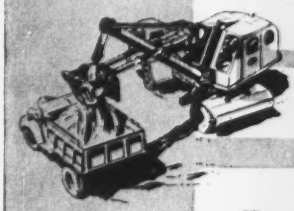
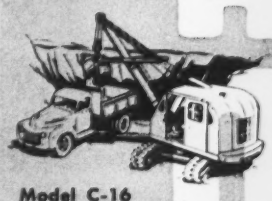


Series 8
½ yd., 8 ton



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Digs, hoists, swings fast...crawls smoothly

...with help of TIMKEN® bearings

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The tapered rollers and races of Timken bearings enable them to carry radial and thrust loads in any combination. When a load hits the shaft, the bearings absorb it, yet continue to turn freely and frictionlessly.

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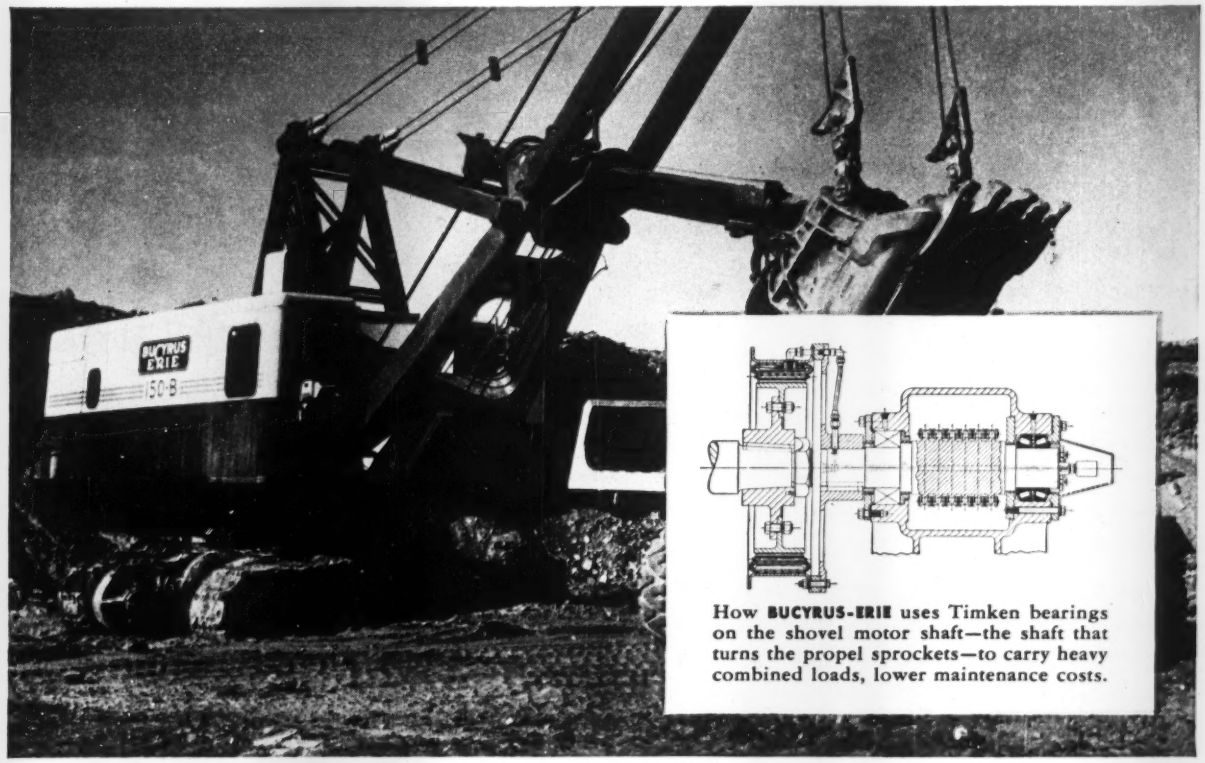
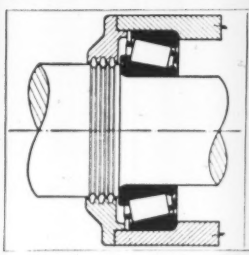
If you build machines, specify Timken bearings; if you buy them, look for the trade-mark "Timken" on every bearing. The Timken Roller Bearing Company, Canton 6, Ohio. Canadian plant: St. Thomas, Ont. Cable address: "TIMROSCO".

This symbol on a product means its bearings are the best.



How **BUCYRUS-ERIE** uses Timken bearings on the shovel motor shaft—the shaft that turns the propel sprockets—to carry heavy combined loads, lower maintenance costs.



LUBRICANT STAYS IN —DIRT KEPT OUT

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The Timken Roller Bearing Company is the acknowledged leader in: 1. advanced design; 2. precision manufacture; 3. rigid quality control; 4. special analysis Timken steels.

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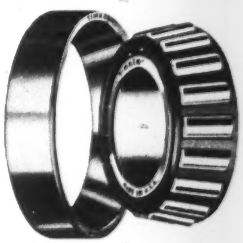

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